DRAFT

Northumberland County, Virginia

APPLICATION FOR FEDERAL *NO DISCHARGE ZONE* DESIGNATION

Submitted to the U.S. Environmental Protection Agency, Region III, by the Commonwealth of Virginia

Jarvis Creek, Prentice Creek, Dividing Creek, Cloverdale Creek, Great Wicomico River, Little Wicomico River and Ingram Bay, Cod Creek, Coan River and the Glebe, Judith Sound, Yeocomico River*

May 23, 2011

* The **Yeocomico River** is in both Northumberland and Westmoreland Counties

Purpose and Background Information

Virginia House Bill 1774 (March 27, 2009) has established the tidal creeks of the Commonwealth as *No Discharge Zones*. Vessels operating in these designated areas may be prohibited from discharging treated and untreated waste into the waters. A *No Discharge Zone* (NDZ) can be established on those tidal creeks where the U.S. Environmental Protection Agency (EPA) has determined that sufficient facilities exist for the removal of sewage.

The designation of NDZs is established by an application process overseen and approved by the EPA. In order to determine the applicability of the requested NDZ designation, each application must include the criteria necessary for EPA review as listed in the "Protecting Coastal Waters from Vessel and Marina Discharges: A Guide for State and Local Officials," www.epa.gov/reg3wapd/nodischarge/index.htm

Prepared by the Northern Neck Planning District Commission for the Virginia Department of Environmental Quality

The Northern Neck Planning District Commission
P.O. Box 1600
Warsaw, Virginia 22572
804.333.1900
www.nnpdc.org

Virginia Department of Environmental Quality
629 East Main Street
P.O. Box 1105
Richmond, VA 23218
804.698.4000
www.deq.virginia.gov

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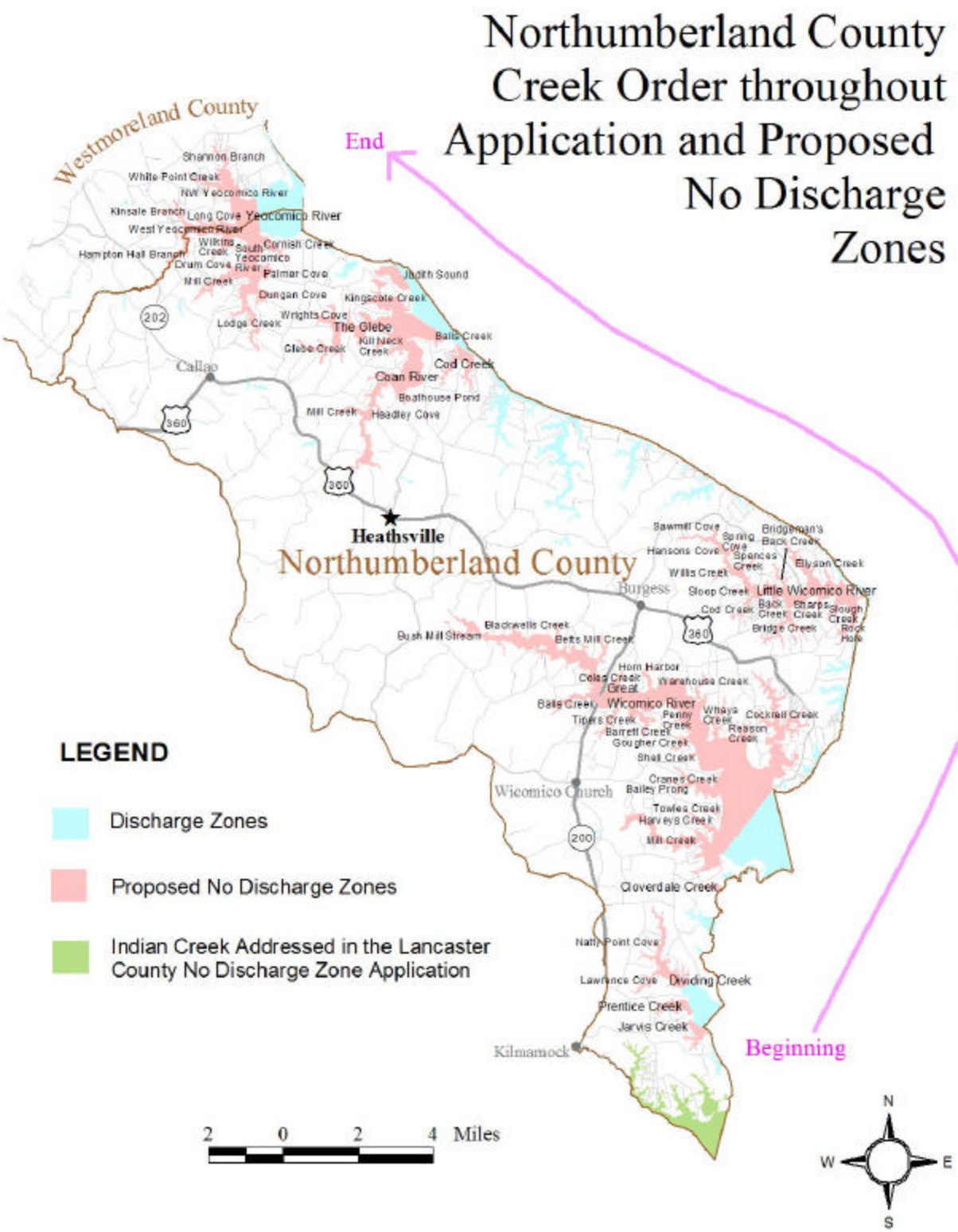
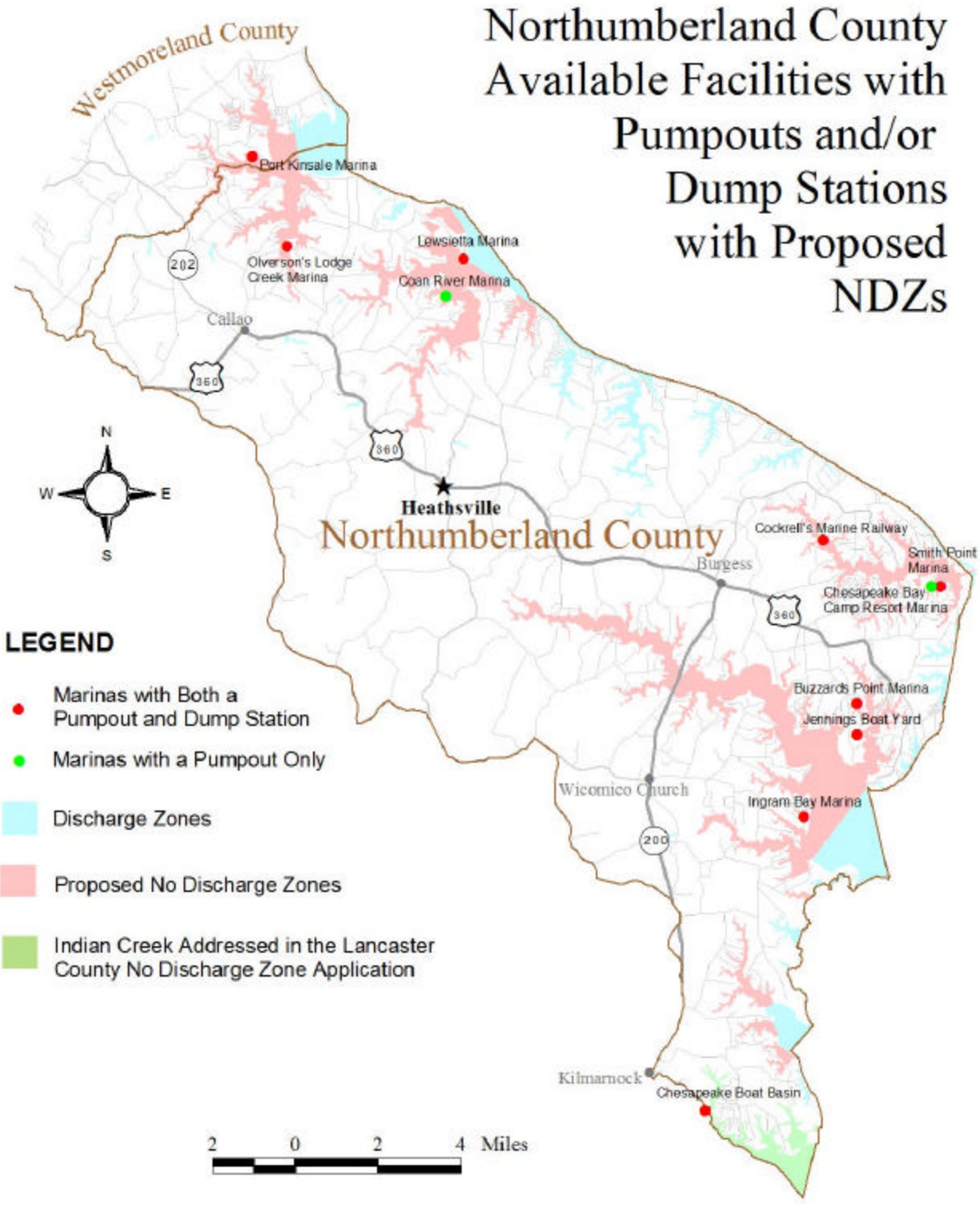


Source: Northern Neck Planning District Commission



Source: Northern Neck Planning District Commission

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Submitted to the U.S. Environmental Protection Agency, Region III, by the Commonwealth of Virginia

Date of Submission: ***TBA***

Bodies of Water Affected:

The order of creeks listed progresses from the Lancaster/Northumberland county border, up the Chesapeake Bay and up along the Potomac River to the Northumberland/Westmoreland county border, in counter-clockwise fashion (Reference Map: Page 5). This order is maintained throughout the application.

1. Jarvis Creek
2. Prentice Creek
3. Dividing Creek (Lawrence Cove, Natty Point Cove)
4. Cloverdale Creek
5. Great Wicomico River (Mill Creek, Harveys Creek, Towles Creek, Cranes Creek, Bailey Prong, Shell Creek, Gougher Creek, Penny Creek, Barrett Creek, Tipers Creek, Balls Creek, Bushmill Stream, Blackwells Creek, Betts Mill Creek, Coles Creek, Horn Harbor, Warehouse Creek, Whays Creek, Reason Creek, Cockrell Creek)
6. Ingram Bay (upstream portion)
7. Little Wicomico River (Rock Hole, Slough Creek, Sharps Creek, Bridge Creek, Back Creek, Cod Creek, Sloop Creek, Willis Creek, Hansons Cove, Sawmill Cove, Spring Cove, Spences Creek, Bridgemans Back Creek, Ellyson Creek)
8. Cod Creek
9. Coan River and the Glebe (Balls Creek, Boathouse Pond, Headley Cove, Mill Creek, Kill Neck Creek, Glebe Creek, Wrights Cove, Kingscote Creek)
10. Judith Sound
11. Yeocomico River (South Yeocomico River, Cornish Creek, Palmer Cove, Dungan Cove, Lodge Creek, Mill Creek, Drum Cove, West Yeocomico River, Wilkins Creek, Hampton Hall Branch, Kinsale Branch, Long Cove, Northwest Yeocomico River, White Point Creek, Shannon Branch)

Within this application, when the numbered creeks named above are used, the tributatires that appear in parenthesis are automatically included.

Location: Northumberland and Westmoreland Counties, Virginia

1. INTRODUCTION

The establishment of No Discharge Zones is one of the water-quality improvement strategies adopted under the 2000 Chesapeake Bay Agreement. More specifically, Virginia House Bill 1774 (March 27, 2009) established all tidal creeks of the Commonwealth as No Discharge Zones—that is, zones where vessels may be prohibited from discharging treated or untreated waste into the waters.

Because the final decision on whether a creek becomes a No Discharge Zone rests with the U.S. Environmental Protection Agency, this application submits pertinent data to help the EPA make that decision regarding the subject state waters.

1.1 Description of Area & Geographic Location

All of the subject waters are rural watersheds in Virginia's Coastal Plain, on the Northern Neck peninsula, and in Northumberland County (with the exception of the Yeocomico River, which straddles Northumberland and Westmoreland Counties). All waters north of the Little Wicomico River drain to the Chesapeake Bay via the Potomac River; the rest drain directly to the Chesapeake Bay.

- **Jarvis Creek**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°43'05.607"N, 76° 18'46.654"W and 37°43'23.232"N, 76°19'11.484"W
- **Prentice Creek**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°43'33.741"N, 76° 19'02.909"W and 37°43'50.348"N, 76°19'23.236"W
- **Dividing Creek**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°44'09.416"N, 76° 19'33.169"W and 37°44'15.829"N, 76°19'19.146"W
- **Cloverdale Creek**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°46'22.881"N, 76° 18'34.498"W and 37°46'30.962"N, 76°18'21.933"W
- **Great Wicomico River and Ingram Bay**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°47'14.537"N, 76° 18'23.845"W and 37°48'49.047"N, 76°16'57.069"W
- **Little Wicomico River**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°53'22.424"N, 76° 14'10.014"W and 37°53'24.477"N, 76°14'11.372"W
- **Cod Creek**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°58'43.428"N, 76° 25'54.714"W and 37°59'02.207"N, 76°26'26.514"W
- **Coan River and the Glebe**: Includes all contiguous waters upstream of the line formed between the points with coordinates 37°59'11.264"N, 76° 26'41.363"W and 37°59'44.517"N, 76°27'47.029"W
- **Judith Sound**: Includes all contiguous waters upstream of the line formed between the points with coordinates 38°00'18.003"N, 76° 27'49.416"W and 38°00'47.635"N, 76°28'14.204"W
- **Yeocomico River**: Includes all contiguous waters upstream of the line formed between the points with coordinates 38°01'33.456"N, 76° 32'12.207"W and 38°02'19.266"N, 76°32'24.235"W

1.2 Discharges

- **Jarvis Creek**: East into the Chesapeake Bay
- **Prentice Creek**: East into the Chesapeake Bay
- **Dividing Creek**: Southeast into the Chesapeake Bay
- **Cloverdale Creek**: East into the Chesapeake Bay
- **Great Wicomico River and Ingram Bay**: Southeast into the Chesapeake Bay
- **Little Wicomico River**: East into the Chesapeake Bay
- **Cod Creek**: North into the Potomac River
- **Coan River and the Glebe**: North into the Potomac River
- **Judith Sound**: East into the Potomac River
- **Yeocomico River:** East into the Potomac River

1.3 Drainage Areas of Watershed

- **Jarvis Creek**: 59 acres or 1.34 square miles
- **Prentice Creek**: 715 acres or 1.11 square miles
- **Dividing Creek**: 4,627 acres or 7.22 square miles
- **Cloverdale Creek**: 455 acres or 0.71 square miles
- **Great Wicomico River and Ingram Bay**: 54,672 acres or 85.425 square miles
- **Little Wicomico River**: 10,528 acres or 16.45 square miles
- **Cod Creek**: 2,034 acres or 3.17 square miles
- **Coan River and the Glebe**: 20,614 acres or 32.20 square miles
- **Judith Sound**: 549 acres or 0.85 square miles
- **Yeocomico River**: 37,918 acres or 59.24 square miles

1.4 Shoreline and No Discharge Zone Areal Extent

Rationale for chosing the boundaries of the proposed No Discharge Zones:

The majority of NDZ boundaries have been placed at the mouth of each creek due to previous or current VDH shellfish condemnation extents. Two exceptions are the Yeocomico River, whose proposed NDZ area does not include the large bay at the mouth, which, to date, has not been condemned for shellfish use; and the Great Wicomico River, whose proposed NDZ boundary extends beyond the mouth to include the upper portion of Ingram Bay.

- **Jarvis Creek**: Approximately 4.58 miles or 24,230 feet, of shoreline; and approximately 0.20 square miles, or 129 acres, of NDZ areal extent
- **Prentice Creek**: Approximately 4.32 miles or 22,816 feet, of shoreline; and approximately 0.20 square miles, or 129 acres, of NDZ areal extent
- **Dividing Creek**: Approximately 15.57 miles or 82,257 feet, of shoreline; and approximately 0.67 square miles, or 429 acres, of NDZ areal extent
- **Cloverdale Creek**: Approximately 2.22 miles or 11,739 feet, of shoreline; and approximately 0.07 square miles, or 47 acres, of NDZ areal extent
- **Great Wicomico River and Ingram Bay**: Approximately 116.20 miles or 613,571 feet, of shoreline; and approximately 10.55 square miles, or 6,756 acres, of NDZ areal extent
- **Little Wicomico River**: Approximately 53.49 miles or 282,462 feet, of shoreline; and approximately 2.68 square miles, or 1,715 acres, of NDZ areal extent
- **Cod Creek**: Approximately 8.78 miles or 46,374 feet, of shoreline; and approximately 0.36 square miles, or 235 acres, of NDZ areal extent
- **Coan River and the Glebe**: Approximately 46.66 miles or 246,390 feet, of shoreline; and approximately 3.83 square miles, or 2,454 acres, of NDZ areal extent
- **Judith Sound**: Approximately 2.52 miles or 13,339 feet, of shoreline; and approximately 0.24 square miles, or 155 acres, of NDZ areal extent
- **Yeocomico River**: Approximately 53.34 miles or 281,651 feet, of shoreline; and approximately 3.83 square miles, or 2,451 acres, of NDZ areal extent

1.5 Water Characteristics

All waterbodies listed are subject to the action of tides and annual rainfall.

- **Jarvis Creek**: Mesohaline (15.1 to 18 ppt salinity).

- **Prentice Creek**: Mesohaline (15.1 to 18 ppt salinity).
- **Dividing Creek**: Mesohaline (15.1 to 18 ppt salinity).
- **Cloverdale Creek**: Mesohaline (15.1 to 18 ppt salinity).
- **Great Wicomico River and Ingram Bay**: Mesohaline (12.6 to 18 ppt salinity).
- **Little Wicomico River**: Mesohaline (12.6 to 15 ppt salinity).
- **Cod Creek**: Mesohaline (12.6 to 15 ppt salinity).
- **Coan River and the Glebe**: Mesohaline (12.6 to 15 ppt salinity).
- **Judith Sound**: Mesohaline (12.6 to 15 ppt salinity).
- **Yeocomico River**: Mesohaline (10.1 to 12.5 ppt salinity).

Sources: http://www.chesapeakebay.net/mapsearchresults.aspx?menuitem=14873 and The Virginia Department of Environmental Quality (DEQ)

1.6 Depth

Visual Reference: maps 6.9 to 6.14, starting on page 30

- **Jarvis Creek**: A maximum depth of 8 feet at its widest section next to very shallow banks. The rest of the creek alternates between 1 and 5 feet
- **Prentice Creek**: A maximum depth of 6 feet at its widest section next to very shallow banks. The rest of the creek alternates between 2 and 6 feet
- **Dividing Creek**: A maximum depth of 15 feet at its widest section next to very shallow banks. The rest of the creek alternates between 4 and 13 feet
- **Cloverdale Creek**: A maximum depth of 2 feet at its widest section next to very shallow banks. The rest of the creek alternates between 1 and 2 feet
- **Great Wicomico River and Ingram Bay**: A maximum depth of 22 feet at its widest section next to very shallow banks. The rest of the creek alternates between 2 and 20 feet
- **Little Wicomico River**: A maximum depth of 8 feet at its widest section next to very shallow banks. The rest of the creek alternates between 1 and 6 feet
- **Cod Creek**: A maximum depth of 5 feet at its widest section next to very shallow banks. The rest of the creek alternates between 1 and 5 feet
- **Coan River and the Glebe**: A maximum depth of 14 feet at its widest section next to very shallow banks. The rest of the creek alternates between 2 and 13 feet
- **Judith Sound**: A maximum depth of 5 feet at its widest section next to very shallow banks. The rest of the creek alternates between 1 and 4 feet
- **Yeocomico River:** A maximum depth of 18 feet at its widest section next to very shallow banks. The rest of the creek alternates between 2 and 17 feet

1.7 Certification of Need

The tidal tributaries detailed herein need greater protection than the current federal standards afford. With the exception of some wider sections at the mouths of these tributaries, the shellfishing use of these waters has been or currently is compromised by bacterial impairment, which causes the tributaries not to meet state water-quality standards. While terrestrial pollution is a threat to these marine natural resources, vessel pollution is direct and proximate to oyster grounds, and therefore may have a more immediate impact on local water quality.

In accordance with the Code of Federal Regulations—40 CFR §140.4(a)—this application requests that the U.S. Environmental Protection Agency (EPA) determine that "adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels using such waters are reasonably available," and that approval of a No Discharge Zone for the subject waters be granted.

Given approval from EPA, the Commonwealth of Virginia intends to prohibit all vessel sewage discharges, whether treated or untreated, into the No Discharge Zone proposed by this application. The NDZ designation will not apply to graywater vessel discharges in the affected areas, provided the graywater discharge system is independent from the sewage system (i.e., no shared tanks, pipes, pumps, or valves). The following pages document the environmental status of the watersheds. They also document that adequate sewage-removal facilities are available to justify a No Discharge Zone designation.

1.8 Proposed Boundaries of the No Discharge Zone

All No Discharge Zones proposed include the entire area of the water bodies listed in Section 1.4, Page 9, except for Dividing Creek and the Yeocomico River.

Visual Reference: maps 6.1 to 6.8, starting on page 22

2. RESOURCES AND ENVIRONMENTAL ISSUES

All of the waterbodies considered in this NDZ application are tributaries within the Chesapeake Bay (the "Bay") drainage. The Bay is one of the largest estuarine systems in the United States, and one of the nation's most valuable natural resources.

2.1 Human Use

- **Development within Watersheds**

  The drainage area of each of the water bodies included in this application has a number of addressed structures built on it. They are known as E911 building structures (2010 E911). Assuming, conservatively, that all these structures are residences, and that the number of persons per household is the 2010 US Census average for Northumberland County (2.2), this translates into an estimated population indicated for each water body. Because many of the homes are part-time or vacation homes, the population cited should be considered a maximum population during warmer months.

  - **Jarvis Creek**: 59 E911 Structures, estimated population of 130
  - **Prentice Creek**: 101 E911 Structures, estimated population of 222
  - **Dividing Creek**: 354 E911 Structures, estimated population of 779
  - **Cloverdale Creek**: 4 E911 Structures, estimated population of 9
  - **Great Wicomico River and Ingram Bay**: 4,445 E911 Structures, estimated population of 9,779
  - **Little Wicomico River**: 1,862 E911 Structures, estimated population of 4,096
  - **Cod Creek**: 253 E911 Structures, estimated population of 557
  - **Coan River and the Glebe**: 1,528 E911 Structures, estimated population of 3,362
  - **Judith Sound**: 76 E911 Structures, estimated population of 167
  - **Yeocomico River (Northumberland)**: 2,167 E911 Structures, estimated population of 4,767
  - **Yeocomico River (Westmoreland):** 765 E911 Structures, estimated population of 1,683

- **Publicly-Owned Launch Access in Northumberland County**

  - ***Cranes Creek Landing (Cranes Creek)**: Boat ramp and very limited parking*
  - ***Coopers Landing (Great Wicomico River)**: Boat ramp and parking*
  - ***Shells Landing (Cockrell Creek)**: Two boat ramps and parking*
  - ***Rowes Landing (Upper Coan River)**: Boat ramp and parking*
  - ***Forrest Landing (Upper Coan River)**: Boat ramp and parking*
  - ***Lodge Landing (Lodge Creek, South Yeocomico River)**: Boat ramp and parking*

- **Activities**

  - Boating, fishing, shellfish harvesting, crabbing, water skiing, and swimming. Transient recreational vessels use these creeks for rest and re-fitting, anchorage, mooring, and other services while transiting the Potomac River and the Chesapeake Bay, whose waters are plied by vessels of all sizes and types, including sailing vessels, motor yachts, commercial tugs, fishing vessels, personal watercraft, canoes, kayaks, and skiffs.

2.2 Wildlife

Several water-dependent species utilize these waters. The following is an excerpt of the list found in Section 8.1, which includes select species (common and threatened or endangered).

- **Fish**: Croaker, Spot, Gray Trout, Red Drum, and Flounder. Also found: migrating populations of hickory and American shad, striped bass, alewife, yellow perch, short-nose sturgeon and Atlantic sturgeon, menhaden and white perch, and other anadromous fish.
- **Marine mammals**: Bottlenose dolphins utilize the deeper portions of these waterbodies, as well as Harbor Porpoises..
- **Reptiles:** Kemps-Ridley, loggerhead and green sea turtles.
- **Avian**: Ospreys, bald eagles, egrets, cormorants, kingfishers, gulls, herons, loons, various species of ducks, and other migratory and resident species.
- **Mammals**: River otter and muskrat.

2.3 Water Quality Issues

- **Total Maximum Daily Load (TMDL) & Bacterial Impairments**: The following water bodies proposed as No Discharge Zones in this application have been or are currently listed on the 303(d) list of impaired waters for exceedances of bacteria water-quality standards for shellfish use.

NDZ (Name)	Watershed TMDL Status	County
Cockrell Creek	Approved	Northumberland
Dividing Creek & Prentice Cove	Approved	Northumberland
Great Wicomico River Watershed	Approved	Northumberland
Mill Creek, Ball Creek, Cloverdale Creek	Approved	Northumberland
Owens Pond and Little Taskmakers Creek	Approved	Northumberland
Coan River Watershed	Approved	Northumberland
Cod, Presley, Hull, Rogers, Bridgeman, Cubitt, and Hack Creeks	Approved	Northumberland
Little Wicomico River Watershed	Approved	Northumberland
Mill Creek, UT to Kissinger Millpond, Kissinger Millpond	Approved	Northumberland

Source: Virginia DEQ

- **Dissolved Oxygen**: All waters included in the proposed NDZ areas are listed as impaired by the 2006 VA DEQ Water Quality Assessment for Dissolved Oxygen. Additionally, all waters of the Potomac River and the Chesapeake Bay and its tributaries are listed as impaired due to excess nutrients. As a result of these impairements, EPA completed and approved the Chesapeake Bay TMDL (12/29/2010).
- **Aquatic Plants (macrophytes)**: All waters included in the proposed NDZ area are listed as impaired for aquatic plants. As a result of these impairements, EPA completed and approved the Chesapeake Bay TMDL (12/29/2010).
- **Monitoring**: The Virginia Department of Health's Division of Shellfish Sanitation (VDH-DSS) operates an extensive bacteria-monitoring network in these waters and other designated shellfish waters in the Commonwealth. The VDH-DSS monitoring indicates that the subject waters routinely fail to meet water-quality standards for shellfish and are cited with seasonal and/or annual condemnations (Maps 6.15 to 6.24, starting on Page 36). The Virginia Department of Environmental Quality also maintains a long-standing monitoring program in these waters, including portions of the Chesapeake Bay. Parameters measured include chemical and bacteriological data that are analyzed at fixed stations.

Although many sources potentially contribute to declining water quality in these waters, discharges from vessels anchored, docked, moored, or operating within them have the potential to be contributory sources to the overall bacteria load.

Per federal regulations, sanitary wastewater discharged from boats may be relatively concentrated, with a range of fecal coliform from 200 to more than 1,000 Most Probable Number (MPN) per 100 milliliters of water. In addition, the average marine sanitation device is not designed to provide treatment for chemical or biological oxygen demand (BOD), phosphorus, or nitrogen.

Typical Chemical Constituents Measured in Recreational Vessel's Holding Tanks

Chemical Procedure	Unit	Result	Report Limit
BOD	mg/l	2,800	2
COD	mg/l	5,000	25
TKN	mg/l	2,290	.50
Total P	mg/l	113	.20
Fecal Coliform	FC/100 ml	29,000,000	ND

Source: Lynnhaven Boat Wastewater Sampling Program. January 7, 2008

Depending on the type of MSD, wastewater discharges from marine vessels may also contain additional pollutants, such as protozoa (e.g., *giardia*), viruses (e.g., *norovirus*), and deodorants or sanitizing chemicals (e.g., formaldehyde) that are potentially harmful to humans, wildlife, and the environment. See *Marine Sanitation Device (MSD) Standards*, Section 8.3, Page 48. There are some advanced treatment systems that can minimize the BOD and/or the pollutants mentioned here. It is unknown how many of these systems are installed on boats within these waterways and, as with any MSD, the effectiveness of these systems depends on proper maintenance and competency of the individual operating it.

2.4 Shellfish

The current shellfish standard for fecal coliform bacteria allows for a maximum geometric mean of 14 per 100 milliliters (ml) of water and a 90th percentile not to exceed 49 MPN/100ml over a 30-month period.

Under this standard, the water-quality data from VDH-DSS monitoring indicates that significant areas of the subject waters in this application failed to meet the National Shellfish Sanitation Standard for fecal coliform bacteria (Maps 6.15 to 6.24, starting on Page 36).

Condemnation under the DSS classification means it is "unlawful for any person, firm, or corporation to take shellfish from these sections for any purpose, except by permit granted by the Marine Resources Commission, as provided in Section 28.2-810 of the Code of Virginia."

The condemnation is put into effect based on the potential threat to human health resulting from contaminated shellfish consumption. While terrestrial pollution is a threat to these marine natural resources, vessel pollution is direct and proximate to oyster grounds, and therefore may have a more immediate impact on local water quality. Trends over the past decade have shown that bacteria levels in these waters are increasing, resulting in expanded shellfish condemnations.

Reasons for the expansion of shellfish condemnations include increases in shoreline development and impervious surfaces, decreases in protective riparian buffers, old or malfunctioning septic systems, and increased boating activity. Bacterial source-tracking (BST) data collected as a component of the Shellfish TMDLs for the subject waters suggest that, averaged annually, approximately between 11% (Cod Creek) and 64% percent (Station 23, Coan River) of the fecal bacteria in these waters were of human origin. Other sources include wildlife, pets, and livestock.

3. FACILITY INFORMATION

The Virginia Department of Health (VDH) ensures the presence of proper sanitary facilities at marinas. Standards are set forth in the *Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings*, and marina facilities are inspected annually by VDH for compliance with the regulations (See Section 8.5, Page 50).

The following sanitary facilities are currently available within or at a reasonable distance from the proposed *No Discharge Zones* (Maps 6.1 to 6.8, starting on Page 22):

Marinas Open to the Public							
Name and Location	**Contact Person**	**Date & Time of Survey**	**Hours of Operation**	**Dump Station**	**Pumpout**	**Cost**	**Reported Depth at Facility**
Olverson's Lodge Creek Marina 1161 Melrose Road Lottsburg, VA 22511 37.997149, -76.540421 Lodge Creek	Fred Olverson (800) 529-5071	11/12/10 3:45pm	24 hours 7 days **Weekend Hours: 16**	Y	Y	$5	10 feet
Lewisetta Marina 410 Church Lane Lottsburg, VA 22511 37.996143, -76.464179 Coan River	Helen Scerbo (804) 529-7299	11/12/10 3:00pm	7am-5pm 7 days year round **Weekend Hours: 18**	Y	Y	$5	9 feet
Smith Point Marina 989 Smith Point Rd. Reedville, VA 22539 37.884010, -76.251220 Little Wicomico River	Dan Hickey (804)453-4077	11/12/10 1:45pm	7:30-5pm 7 days april-dec **Weekend Hours: 17**	Y	Y	$5 for slip holder or camper	6 feet
Cockrell's Marine Railway 309 Railway Dr Heathsville, VA 22473-2440 37.898827, -76.302915 Little Wicomico River	Miles Cockrell (804) 453-3560	11/12/2010 1:00pm	7-4 M-F	Y	Y	Health Dept. sets fee	5 feet at pumpout
Buzzards Point Marina 468 Buzzard Point Road Reedville VA 22539 37.842594, -76.287079 Cockrell Creek	Linwood Bowis (804) 453-3545	11/12/10 12pm	Mon-Sat 8-5, Sun 8 to 4. **Weekend Hours: 17**	Y	Y	$5	8.5 feet
Jennings Boat Yard 169 Boatyard Road Reedville VA 22539 37.831994, -76.286641 Cockrell Creek	Charlie (804) 453-7181	11/12/10 11:45AM	8-5 M-F and 8-12 Sat **Weekend Hours: 4**	Y	Y	$5	10 feet
Ingram Bay Marina 545 Harvey's Neck Road Heathsville, VA 22473 37.804805, -76.314064 Great Wicomico River	Lady at House (804) 580-7292	11/12/10 10:28AM	If home, open **Weekend Hours: 16**	Y	Y	$5	6 feet
Coan River Marina 3170 Lake Road Lottsburg, VA 22511 37.981920, -76.470729 Coan River	Cori or Tori (804) 529-6767	3/18/11 10:00 AM	8:30-5 M-F and 9:30-2 on Saturday. Off season: 9:30-4 M-F	N	Y	$5	6.5 feet

Port Kinsale Marina 347 Allen Point Lane Kinsale, VA 22488 38.01.889, -76.33.455 Yeocomico River	Marybeth Mullins (804) 472-2044	3/18/11 12:00 AM	8:30-4:30 M-F, off season 8:30-4:30 all week on season	N	Y	$5	6 feet
Chesapeake Boat Basin Inc. Box 159 Kilmarnock, VA 22482 37 42.014, -76 21.089 Indian Creek	Clay Holcomb (804) 435-3110	10/28/10 12:00PM	8-5 M-Sat 8-1 Sunday Jan/Feb closed Sun-Mon	Y	Y	$5	13 feet
Chesapeake Bay Camp Resort Marina 382 Campground Road Reedville, VA 22539-3733 37.882402, -76.254747 Slough Creek, Little Wicomico	Gordon Evans (804) 453-3430	Survey 7/13/2010	8 am to 7 pm	N	Y	$5	3 feet
			Total Weekend Hours: 88 Average Weekend Hours per Facility: (88/6) = 14.6				

Sources: http://www.vdh.virginia.gov/EnvironmentalHealth/Wastewater/MARINA/pumpoutdata/county/richmond.htm, The Northern Neck Planning District Commission, and the marinas themselves – NOTE: Marinas shaded in blue above are not used in the calculations in Section 7, Page 46, either because they are outside the proposed No Discharge Zone, or because they don't offer both types of service—pumpout *and* dump-station, or because they don't open on weekends.

3.1 Facility Maintenance

Routine health department inspections and tests are performed to ensure that the facilities listed above are open to the public and functioning properly. Broken pump-out stations can be reported by calling the VDH Marina Program. Specific design and operation requirements are addressed in *The Virginia Sanitary Regulations for Marinas and Boat Mooring* (Section 8.5, Page 50).

3.2 Facility Waste Treatment Method

Waste collected by the marinas in the proposed NDZ above is disposed of in a holding tank (pump and haul) or treated in an onsite sewage system. The Chesapeake Bay Act requires that onsite sewage-system tanks be pumped out every five years. All wastes are collected from pumpout and dump stations and transported by haulers who deliver them to municipal waste-treatment facilities or private facilities—permitted under the Virginia Pollutant Elimination Discharge System—for their final treatment and disposal. Regulations for these activities are addressed in *The Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings* (See Section 8.5, Page 50).

3.3 Number of Vessels and Estimated Number of Facilities Needed

To calculate the estimated number of vessels in the *No Discharge Zone* proposed by this application, four different sources were considered:

- Field surveys conducted by the NNPDC and/or submitted by marina operators
- Department of Game and Inland Fisheries (vessel registration database)

- Virginia Department of Health, Division of Waste Water Engineering (marina database)
- Federally-documented vessels (U.S. Coast Guard)

Estimates based on combining the number of boats registered in the region and documented federally (exempt from Virginia registration) far exceed those derived from slip counts or marina data. In the interest of obtaining a conservative estimate of the number of facilities needed to provide pumpout and dump-station services for every potential vessel in the proposed No Discharge Zones, this application therefore uses the combined population estimates from the Virginia Department of Game and Inland Fisheries and the U.S. Coast Guard.

Because all of the Yeocomico River is included in this application, a proportional number of boats from Westmoreland County were added to Northumberland County's total, using the following method:

- Boats added from Westmoreland County represent 10.4% of Westmoreland's DGIF totals. The 10.4% is derived from the number of E911 building structures that are part of the Yeocomico River watershed on the Westmoreland County side of the river. In addition, 10.4% of Westmoreland County's federally-documented vessels have been added to Northumberland County's federally-documented total.

To calculate the estimated number of facilities needed for the proposed NDZ areas, this application utilizes an Environmental Protection Agency formula, titled *Boater Sanitary Waste Reception Facility Requirements Worksheet*, shown in Section 7, Page 46.

The data indicate a total of 8,875 vessels for Northumberland County. Of those, 1,035 are 26-to-40 feet in length, and 4,899 are 16-to-26 in length. To derive the estimated number of pumpout facilities and dump stations required for the area being proposed as a No Discharge Zone, the EPA formula considers the number of vessels with holding tanks, the peak occupancy rates of marinas, and the average number of hours the marinas operate.

For this application, the calculation indicates that the need is three pumpout facilities (2.81) and five dump stations (4.14) to serve the estimated 889 vessels (i.e. 725 requiring a dump station and 164 requiring a pumpout facility) expected to use such services (See Section 7, Page 46).

As noted in Section 3 above, Northumberland County has 6 (six) marinas with weekend hours and *both* dump-station and pumpout services for customers within the proposed No Discharge Zone. See Section 3, Page 16.

There are two marinas in the Coan River and one in the Yeocomico River on the Potomac River shoreline of Northumberland County. The maximum distance for a boater to travel from one of the smaller creeks open to the Potomac River to one of these marinas is approximately 5 miles (from Hull Creek, upstream to the Coan River).

3.4 Exclusions Due to Draught Requirements

The Environmental Protection Agency's No Discharge Zone requires states to provide exclusions for boats unable to access pumpouts or dump stations due to draught requirements. Because Northumberland County has enough marinas with mean low-tide depths of at least 5 feet, no such exclusion is proposed with this application.

4. ENFORCEMENT, SUPPORT, AND OUTREACH ACTIVITIES

4.1 State Regulations

The Virginia State Water Control Law (§62.1-44.33) addresses vessel discharges and provides authority for the State Water Control Board to adopt regulations controlling discharges from boats. This section of the law also provides that "Violation of such rules and regulations and violations of the prohibitions created by this section on the discharge of treated and untreated sewage from documented and undocumented boats and vessels shall, upon conviction, be a Class 1 misdemeanor. Every law-enforcement officer of this Commonwealth and its subdivisions shall have the authority to enforce the rules and regulations adopted and promulgated under the provisions of this section and to enforce the prohibitions on the discharge of treated and untreated sewage created by this section."

The current boating regulation that results from this authority is entitled "Regulations Governing the Discharge of Sewage and Other Wastes from Boats" (9 VAC 25-71). This regulation contains a section that addresses No Discharge Zones:

A. All discharge of sewage, whether treated or not, and other wastes from all vessels into designated No Discharge Zones is prohibited. A listing of designated No Discharge Zones within the state appears at 9 VAC 25-71-70.

B. Vessels without installed toilets shall dispose of any collected sewage from portable toilets or other containment devices at facilities approved by the Virginia Department of Health for collection of sewage wastes, or otherwise dispose of sewage in a manner that complies with state law.

C. Vessels with installed toilets shall have a marine sanitation device to allow sewage holding capacity unless the toilets are rendered inoperable.

D. Houseboats having installed toilets shall have a holding tank with the capability of collecting and holding sewage and disposing of collected sewage at a pump-out facility or other facility approved by the Virginia Department of Health for collection of sewage wastes; if a houseboat lacks such capability, the installed toilet shall be removed.

E. Y-valves, macerator pump valves, or any other through-hull fitting valves capable of allowing a discharge of sewage from marine sanitation devices shall be secured in the closed position by a device that is not readily removable, including, but not limited to, a numbered container seal, such that through-hull sewage discharge capability is rendered inoperable.

F. Every owner or operator of a marina within a designated No Discharge Zone shall notify boat patrons leasing slips of the sewage discharge restriction in the No Discharge Zone. As a minimum, notification shall consist of No Discharge Zone information in the slip rental contract and a sign indicating the area is a designated No Discharge Zone.

4.2 Local Enforcement Capability

Should these waters be designated a No Discharge Zone, in addition to the U.S. Coast Guard, the Virginia Marine Police and the Virginia Department of Game and Inland Fisheries will be the state-enforcing authorities. The U.S. Coast Guard Station at Milford Haven (on Hills Bay) is approximately

20 to 28 nautical miles southeast of the proposed No Discharge Zone waters that empty into the Chesapeake Bay (up to Smith Point). The U.S. Coast Guard Station at St. Inigoes, Maryland (on the St. Marys River), is approximately 10 to 20 nautical miles north-northwest of the proposed No Discharge Zone waters that empty into the Potomac River (down to Smith Point). Both the Virginia Marine Resources Marine Patrol and the Department of Game and Inland Fisheries Game Wardens store boats on land, launching from public facilities in the area to patrol the proposed waters.

Additionally, DEQ and the VDH-DSS frequent these waters to monitor for pollutants. Both may act as an auxiliary to the state and federal police functions. Various enforcement methods are under review, including the use of NSF 60 fluorescent yellow/green dye tablets added to vessel holding tanks to detect illegal discharges. The dye tablets could be installed in holding tanks on a voluntary basis by marina operators and boaters, as well as by those using pumpout stations. Localities that have approved NDZs, such as Virginia Beach, have made the use of these tablets mandatory. Northumberland County has the option to enact this mandatory requirement as well, and would assist enforcement of the NDZ, should the application be approved by EPA.

4.3 Local Public Support and Outreach

A local watershed group of 1,800 local members has voiced support for the Northumberland County No Discharge Zone application. Also, NDZ designation has the support of environmental interests represented by state agencies of the Commonwealth, including the Virginia Department of Health, the Virginia Marine Resources Commission, the Virginia Department of Conservation and Recreation, and the Virginia Department of Environmental Quality.

The public meeting took place on May 31st, 2011, at the Northumberland County Courts Building. Comments received during the public-comment period following the meeting provided local input in regard to the proposed NDZ application. Comments and DEQ responses are attached in Section 9, Page 55. Comments and responses will be added following the public comment period and will be provided to EPA for review along with the draft application.

4.4 Existing Point Source Pollution

The majority of land-based activities potentially contributing to bacteriological contamination of the subject waters remain to be addressed by the community, the county, and the state. Most of the waterfront homes in these watersheds are on individual or small-community septic fields, except for a handful connected to the sewage-treatment plants listed below.

The following facilities are permitted under the Virginia Pollutant Discharge Elimination System (VPDES) and are regulated by VA DEQ for the subject waters. Facilities permitted for bacteria discharge are inspected regularly and are required to report any exceedance of water quality standards in order to remain in compliance with their permit.

VPDES Permits for Sanitary Discharges

Facility Name	Permit Number	Receiving Water	Type of Permit
Omega Protein - Reedville	VA0003867	Cockrell Creek	Industrial
Northumberland High School	VA0020877	Crabbe Mill Stream, UTRIB	Municipal Minor (private)
Reedville Sanitary District	VA0060712	Cockrell Creek	Municipal Minor (private)
Lake Packing Company Incorporated	VA0089231	Coan River	Industrial
Callao Wastewater Treatment Plant	VA0091421	Lodge Creek UT	Municipal
Northumberland County School Board	VA0092061	Crabbe Mill Stream UT	Municipal Minor (private)

Source: Virginia Department of Environmental Quality

There are also sites with seafood and industrial permits, most of which have associated boat traffic, which may or may not have MSDs:

Seafood Permits (not permitted for bacteria discharge)

Facility Name	Permit #	Receiving Water	Type
Bevans Oyster Company, Inc.	VAG524026	Yeocomico River	Seafood
C W OBier and Sons Incl, Mundy Point Plant	VAG524021	Yeocomico River	Seafood
Cowart Seafood Corporation	VAG524048	Coan River	Seafood
Harper Seafood, Inc	VAG524036	Yeocomico River	Seafood
James E Headley Oyster Company	VAG524067	Gardy's Mill Pond, Hampton Hall Creek	Seafood
Keyser Brothers Incorporated	VAG524037	Coan River	Seafood
Little River Seafood Incorporated	VAG524018	Little Wicomico River	Seafood
Pride of VA Seafood Products Inc Reedville Plant	VAG524005	Cockrells Creek	Seafood
Purcells Seafood Incorporated	VAG524034	Little Wicomico River	Seafood
Reedville Menhaden Incorporated	VAG524006	Cockrell's Creek	Seafood

Source: Virginia Department of Environmental Quality

Industrial Permits

Facility Name	Permit Number	Receiving Water	Type
Omega Protein - Fairport	VAR051221	Cockrell Creek	Industrial
Omega Protein - Reedville	VAR051211	Cockrell Creek	Industrial
Carry On Trailer Corporation	VAR051302	Mill Creek, UT	Industrial

Source: Virginia Department of Environmental Quality

5. SUMMARY

The small tributaries that are the subject of this application need greater protection than the current federal standards afford. The shallow depths of these waters are compromised by bacterial impairment, low dissolved oxygen, as well as conditions that impair the growth of aquatic plants. These conditions cause the subject waters to violate state water-quality standards. While terrestrial pollution is a threat to these marine natural resources and is acknowledged to be a major indirect source, vessel pollution is a direct source deposited to these waters, and therefore, may have a more imminent impact on the local water quality, as well as the oyster resources which inhabit these tributaries.

Pumpout facilities and dump stations are present in either the affected waters or their vicinity, as listed in Section 3, Page 16. These facilities provide for the proper disposal and treatment of collected onboard wastes.

Enforcement and public outreach can be provided by the Sheriff Department, the U.S. Coast Guard, the Virginia Marine Police, the Virginia Department of Environmental Quality, the Department of Conservation and Recreation, the Virginia Department of Health, and local government.

The Commonwealth of Virginia believes the waters addressed in this application are appropriate candidates for designation as a No Discharge Zone.

6. MAPS

6.1 Jarvis Creek and Prentice Creek – Proposed No Discharge Zone

Source: Northern Neck Planning District Commission

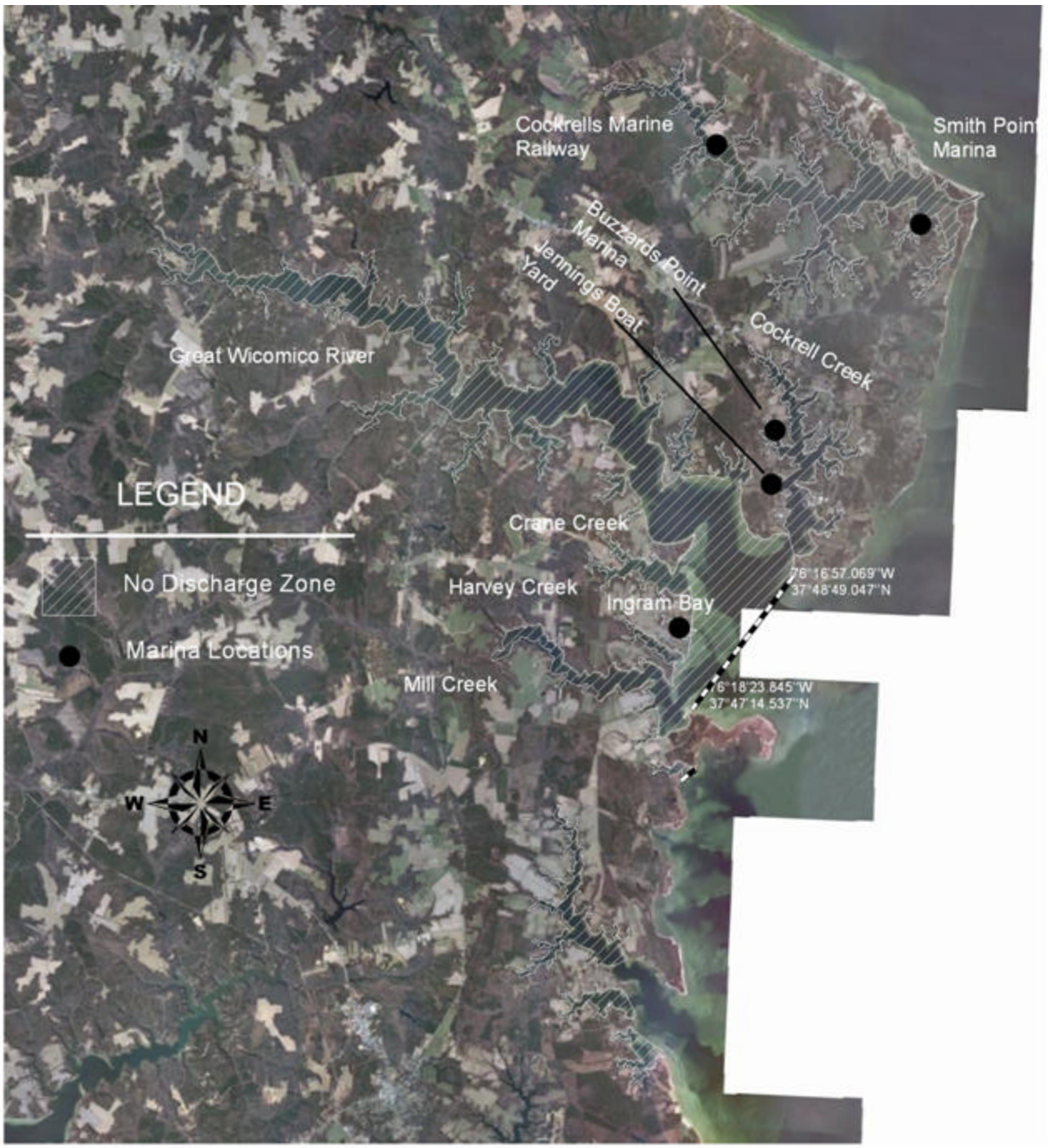
6.2 Dividing Creek – Proposed No Discharge Zone

Source: Northern Neck Planning District Commission

6.3 Cloverdale Creek – Proposed No Discharge Zone

Source: Northern Neck Planning District Commission

6.4 Great Wicomico River and Ingram Bay – Proposed No Discharge Zone



Source: Northern Neck Planning District Commission

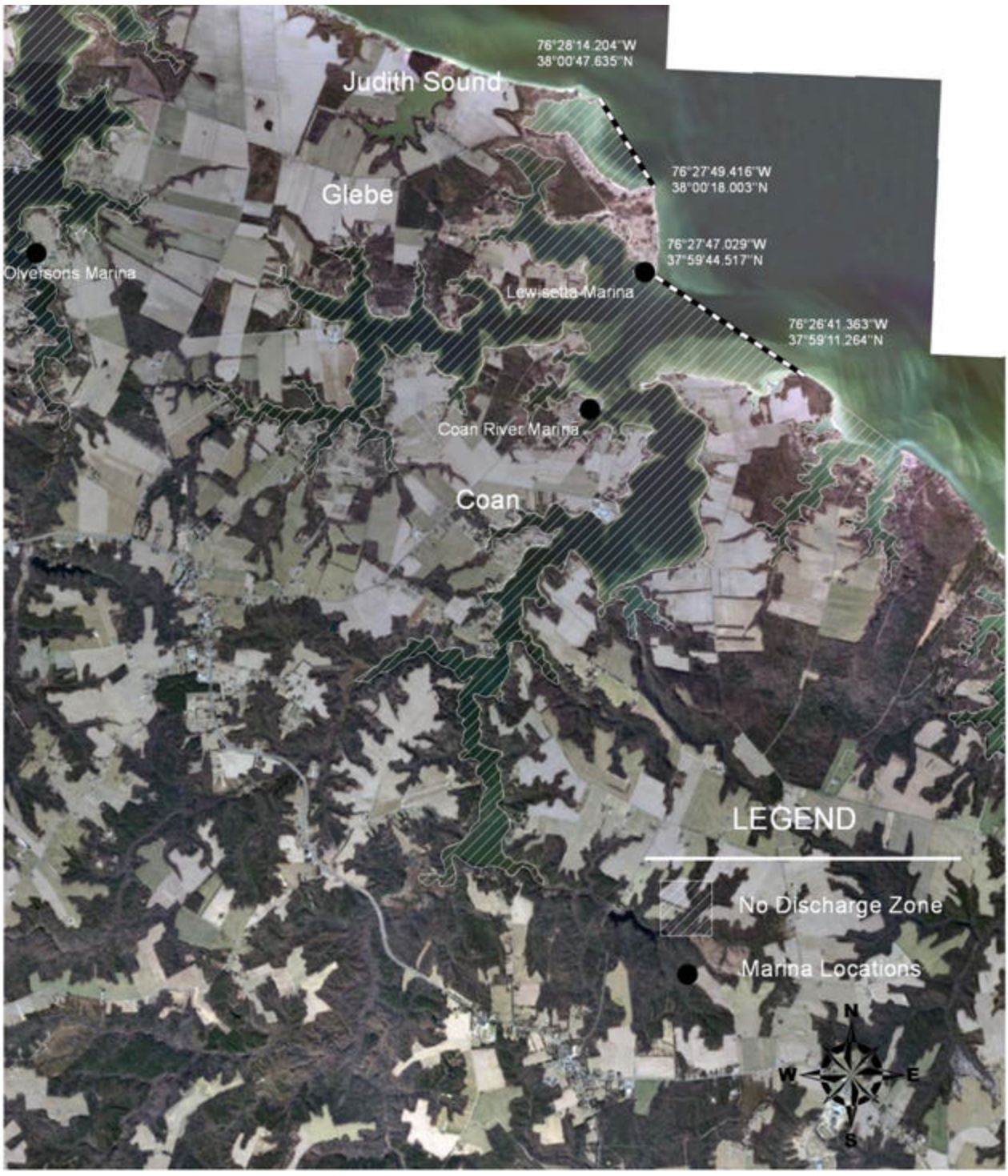
6.5 Little Wicomico River – Proposed No Discharge Zone

Source: Northern Neck Planning District Commission

6.6 Cod Creek – Proposed No Discharge Zone

Source: Northern Neck Planning District Commission

6.7 Coan River, the Glebe, and Judith Sound – Proposed No Discharge Zone

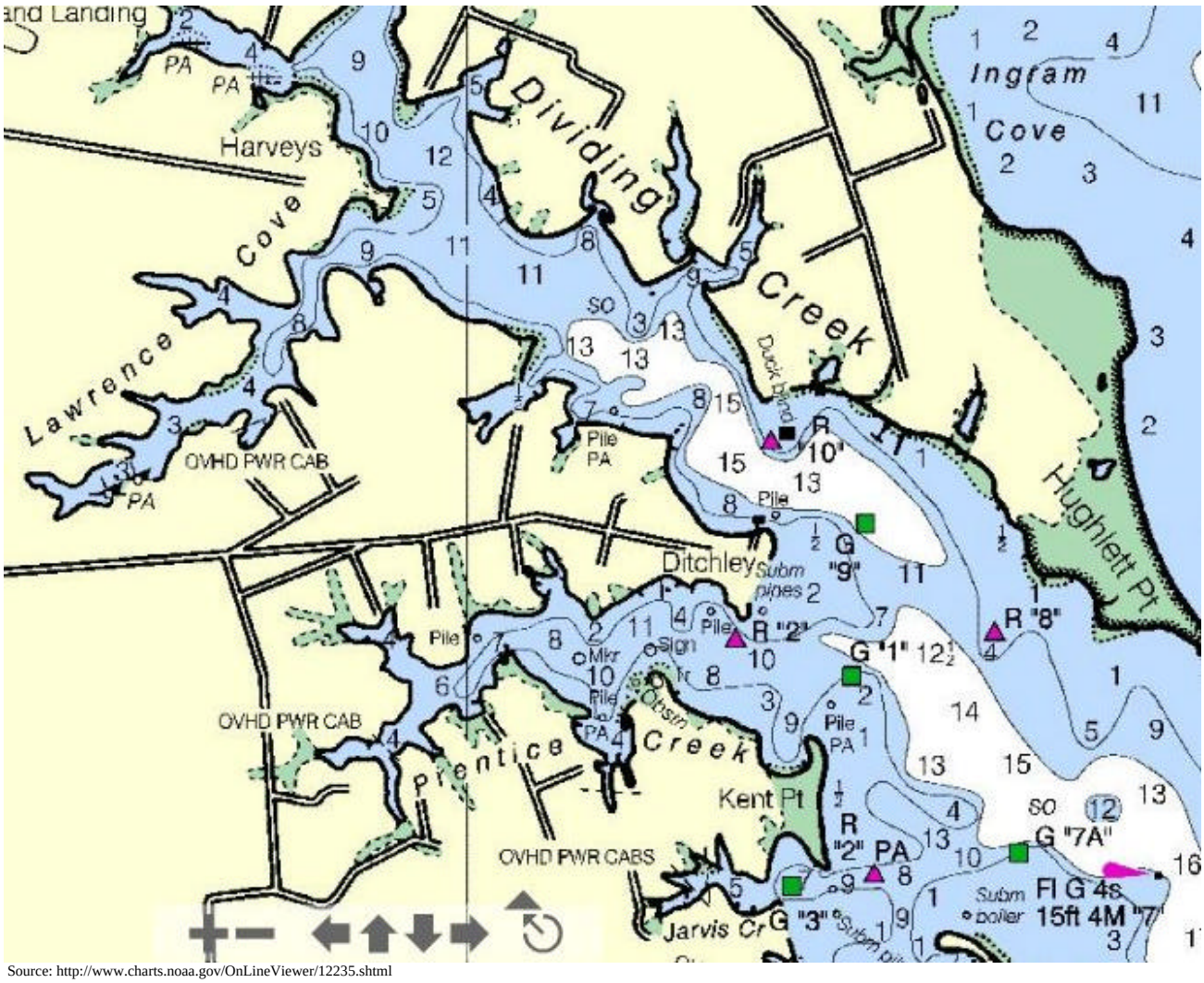


Source: Northern Neck Planning District Commission

6.8 Yeocomico River – Proposed No Discharge Zone

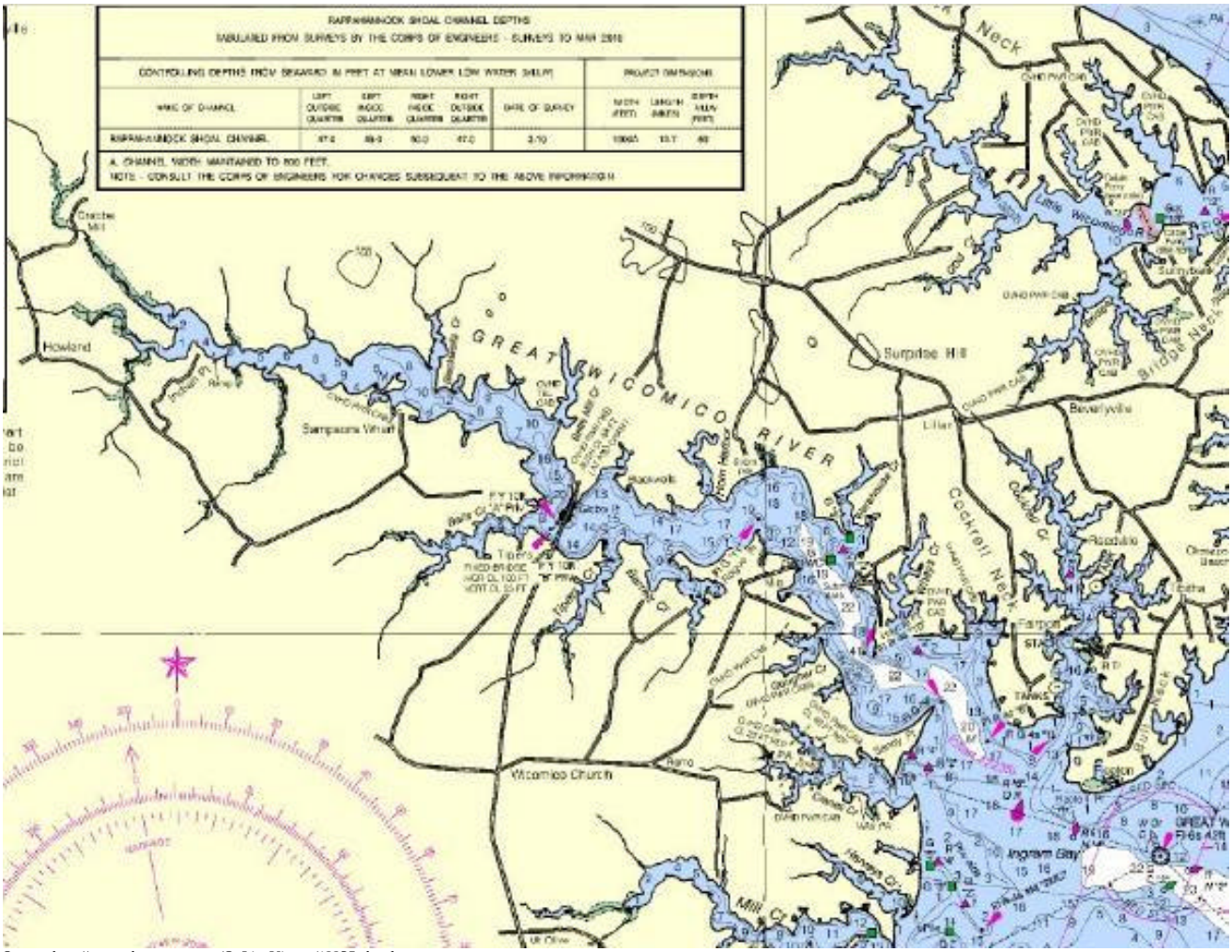
Source: Northern Neck Planning District Commission

6.9 Jarvis Creek, Prentice Creek, and Dividing Creek – Water Depths



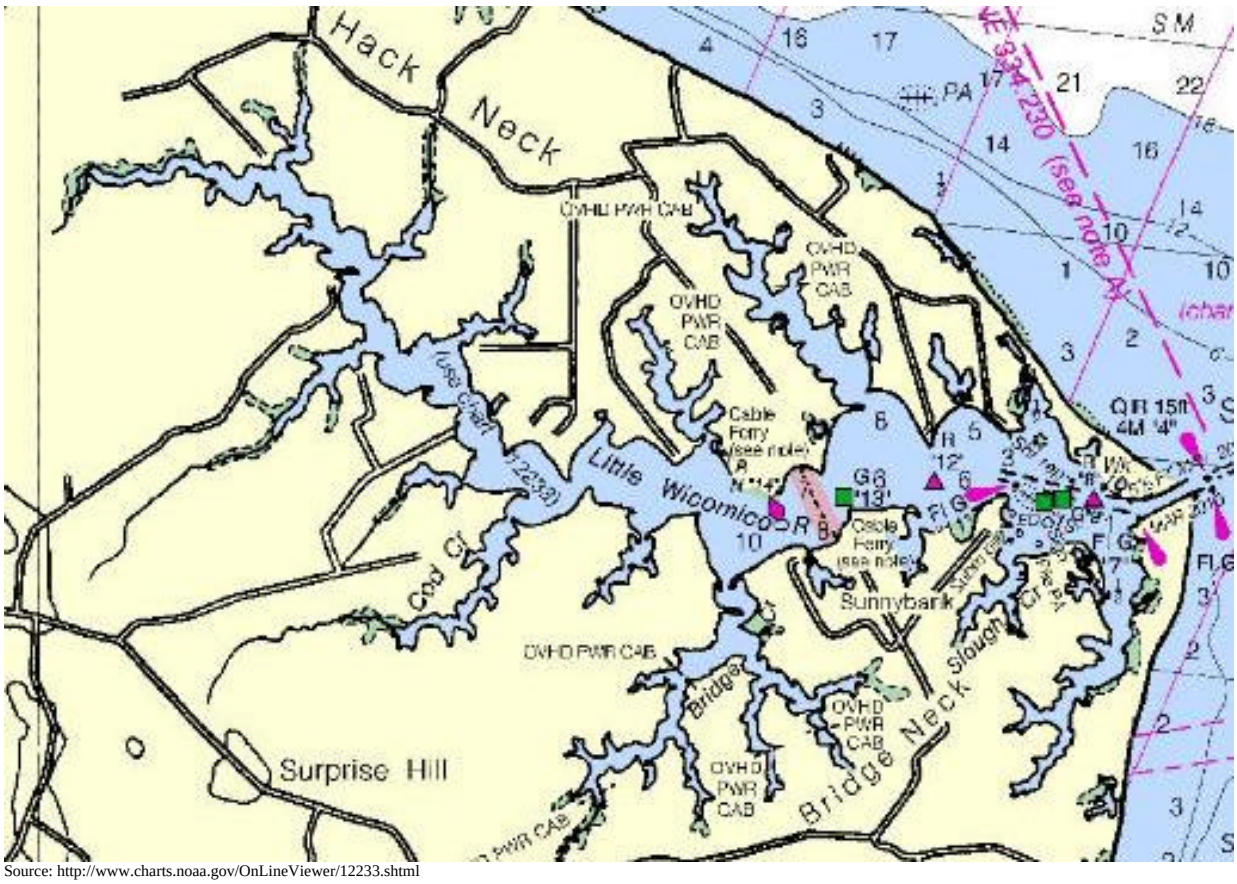
Source: http://www.charts.noaa.gov/OnLineViewer/12235.shtml

6.10 Cloverdale Creek, Great Wicomico River, and Cockrell Creek – Water Depths



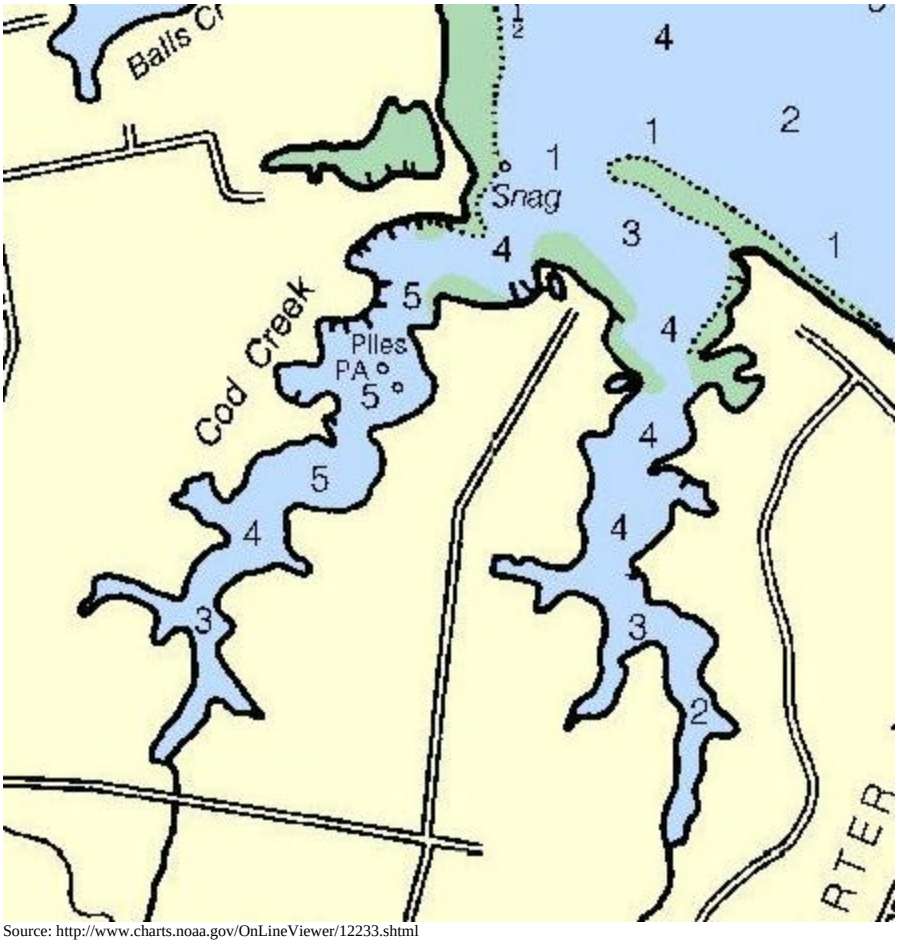
Source: http://www.charts.noaa.gov/OnLineViewer/12235.shtml

6.11 Little Wicomico River – Water Depth



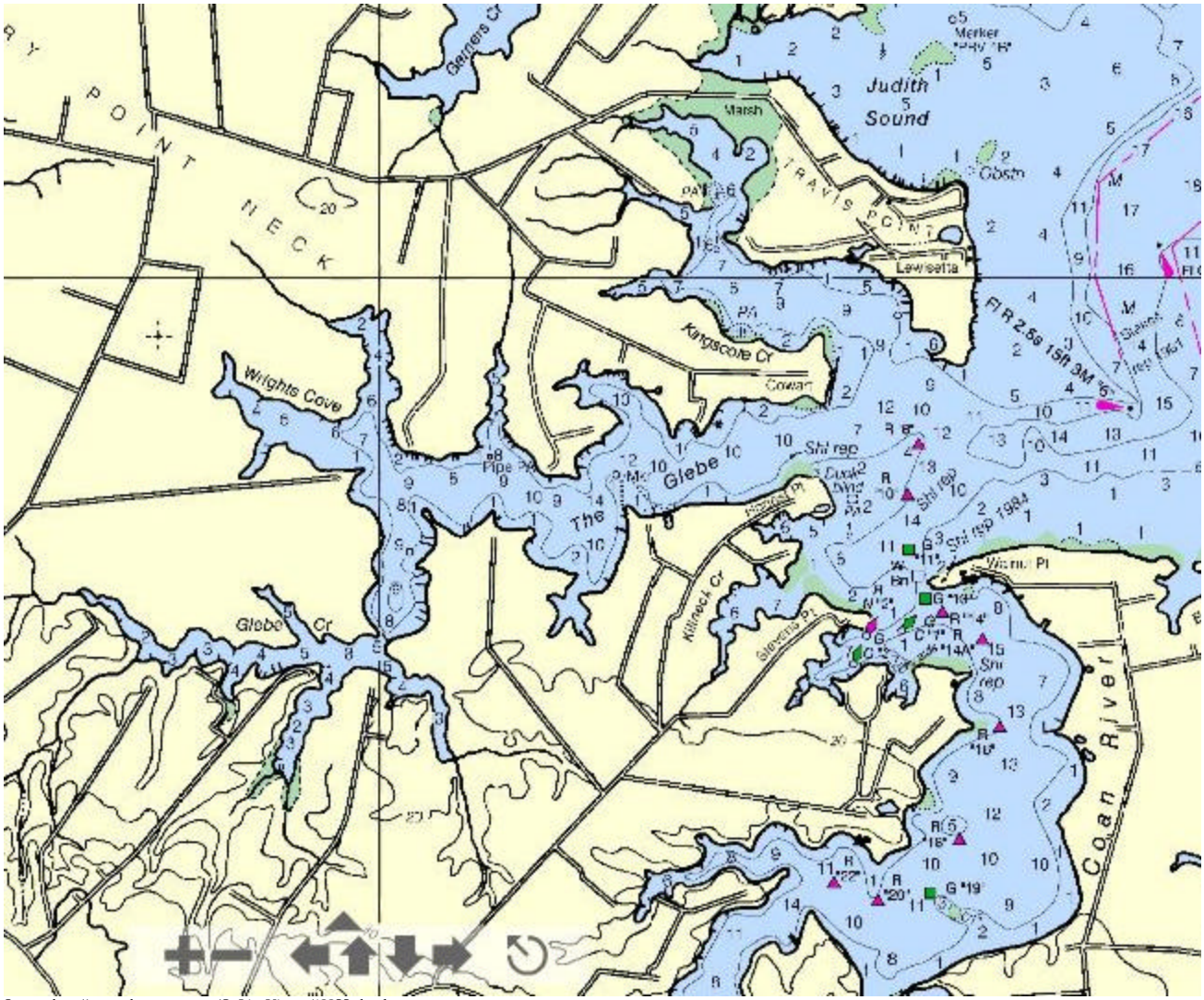
Source: http://www.charts.noaa.gov/OnLineViewer/12233.shtml

6.12 Cod Creek – Water Depth



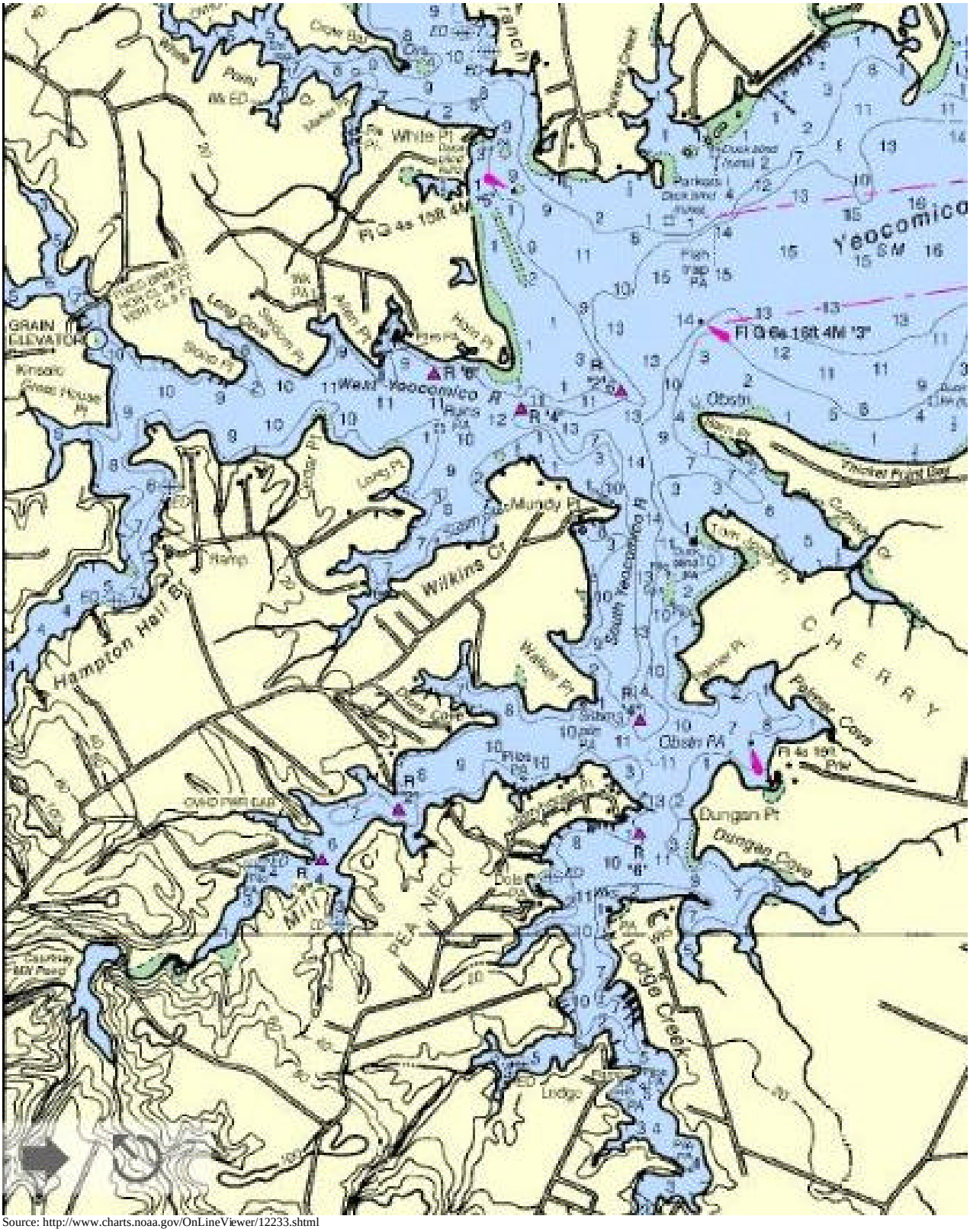
Source: http://www.charts.noaa.gov/OnLineViewer/12233.shtml

6.13 Coan River, the Glebe, and Judith Sound – Water Depth



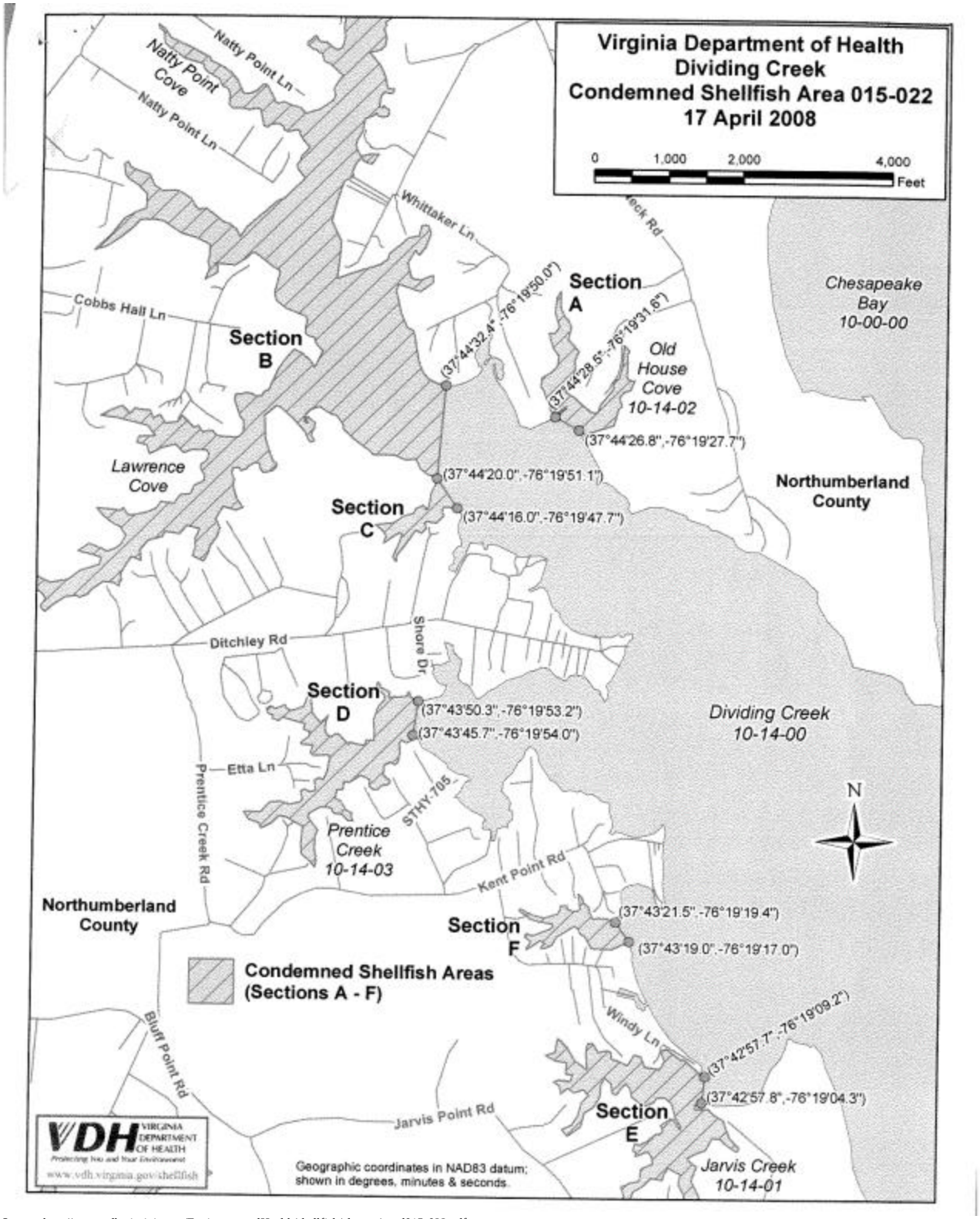
Source: http://www.charts.noaa.gov/OnLineViewer/12233.shtml

6.14 Yeocomico River – Water Depth



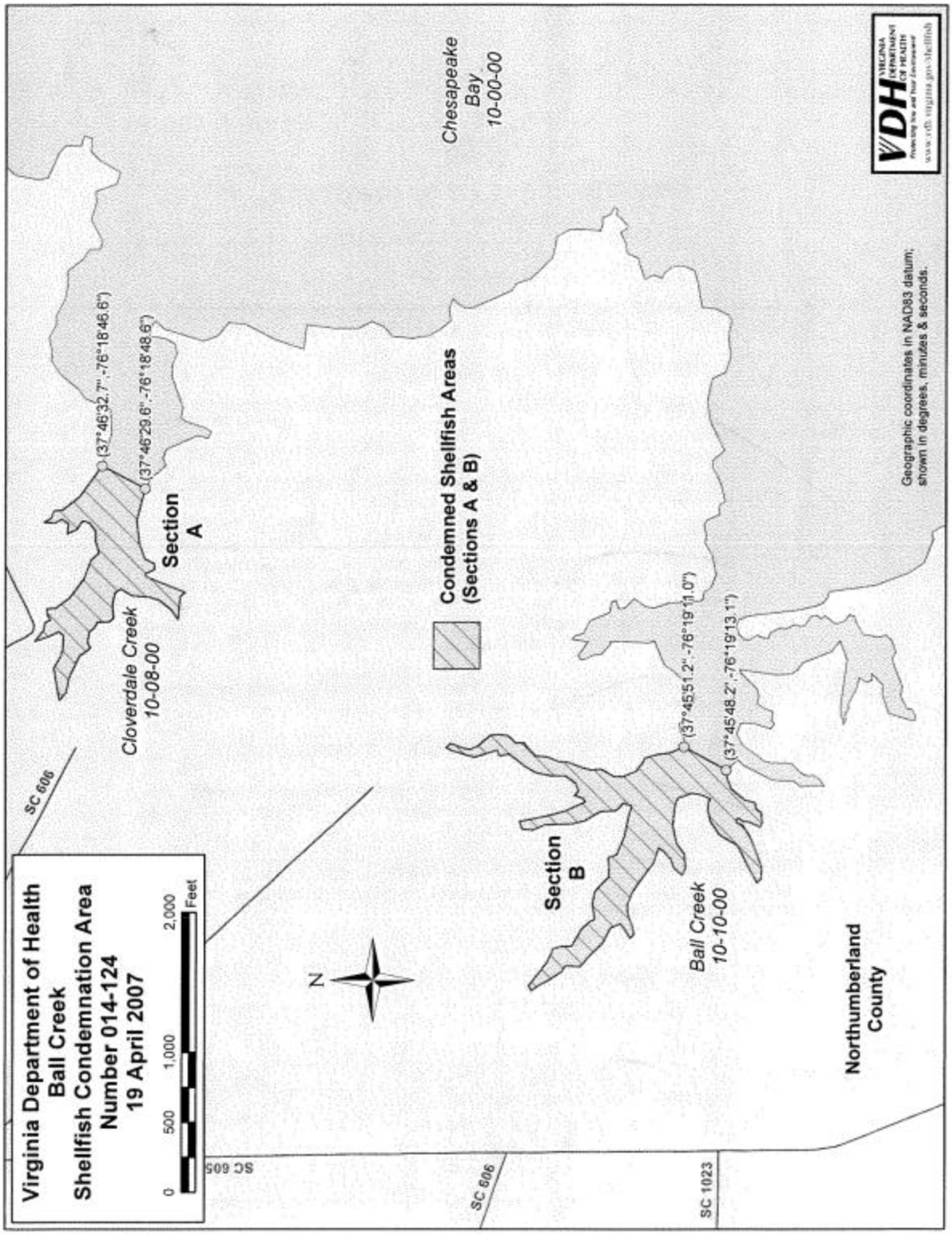
Source: http://www.charts.noaa.gov/OnLineViewer/12233.shtml

6.15 Jarvis Creek, Prentice Creek, and Dividing Creek – Condemned Shellfish Area Map



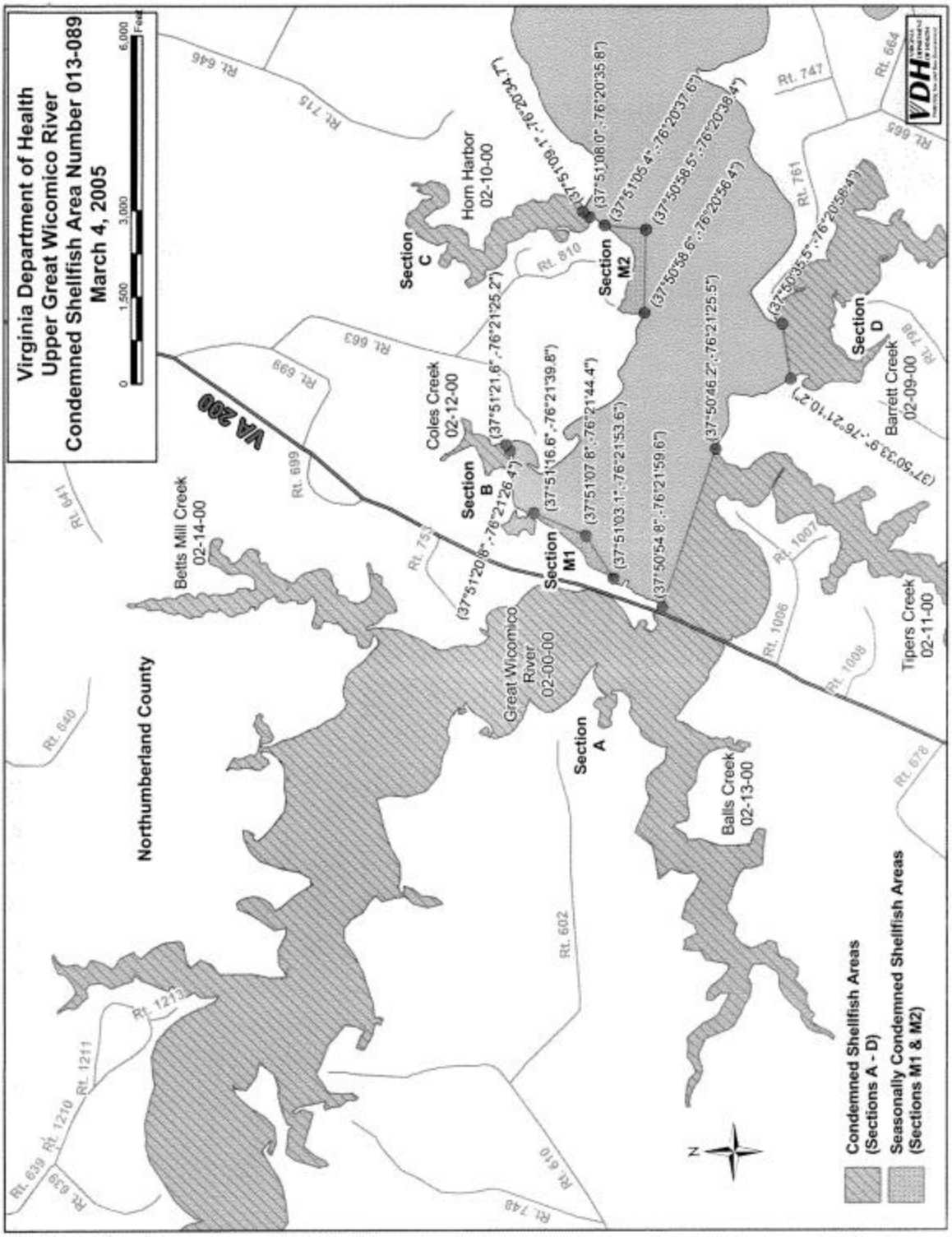
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond015-022.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.16 Cloverdale Creek – Condemned Shellfish Area Map



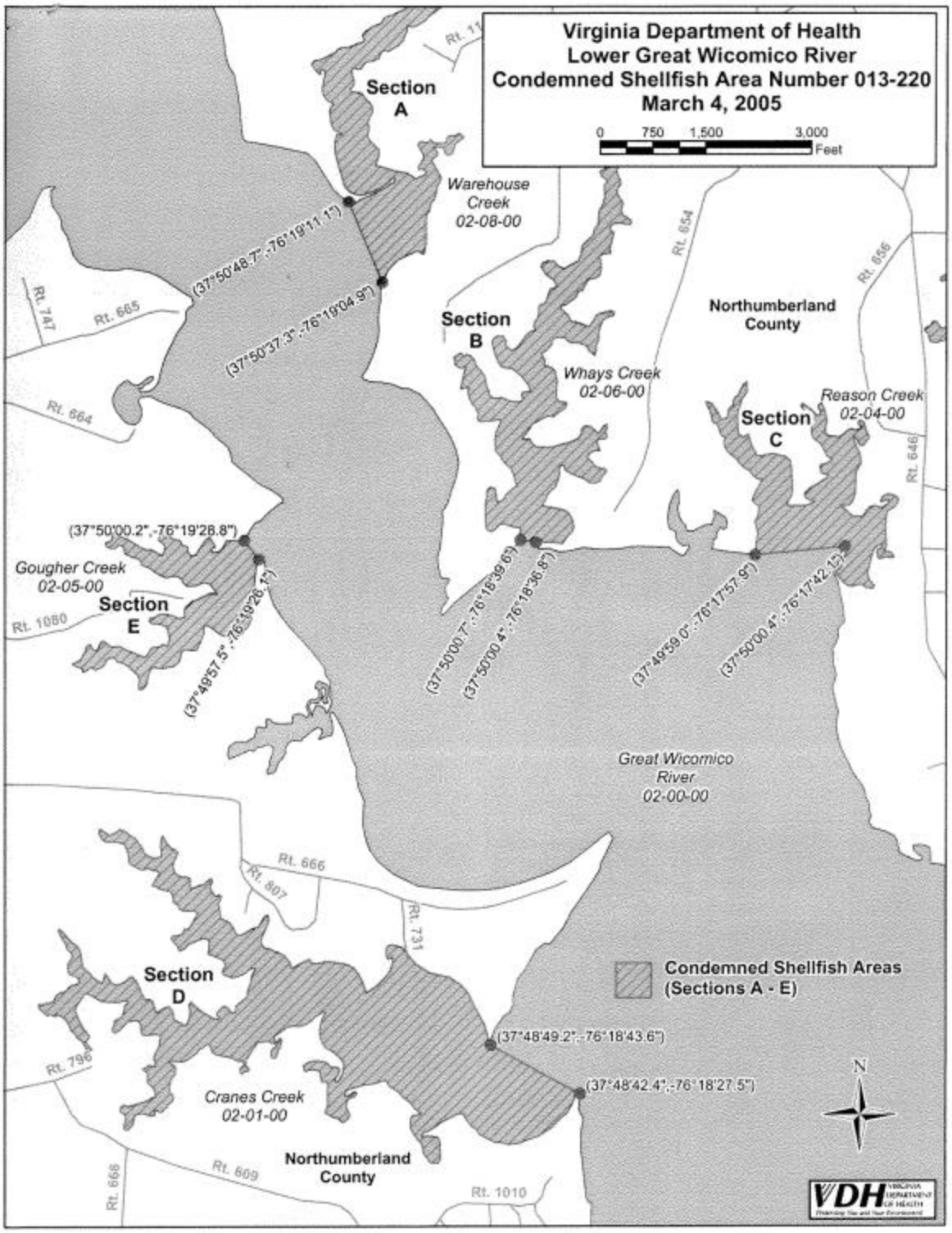
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond014-124.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.17 Upper Great Wicomico River – Condemned Shellfish Area Map



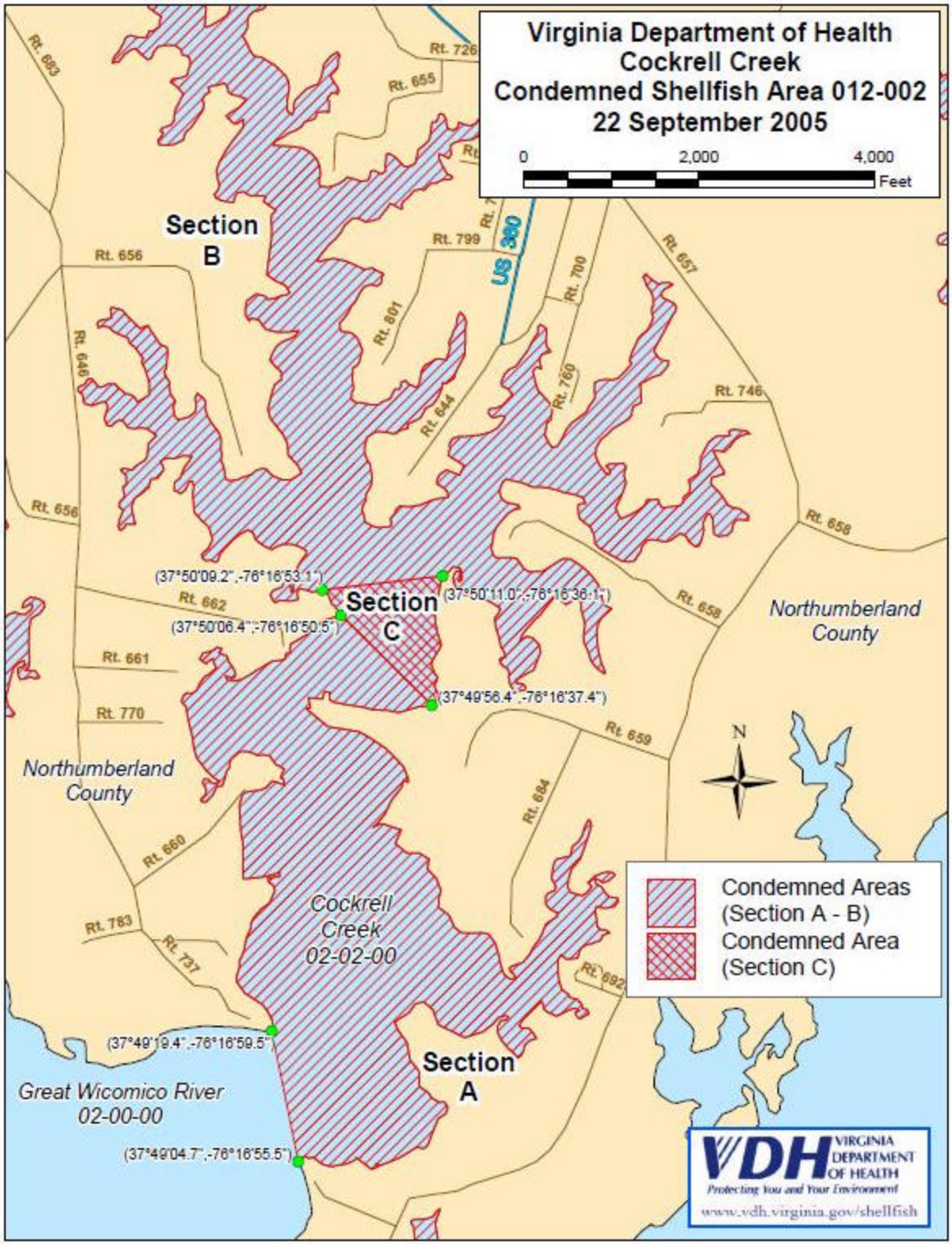
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond013-089.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.18 Lower Great Wicomico River – Condemned Shellfish Area Map



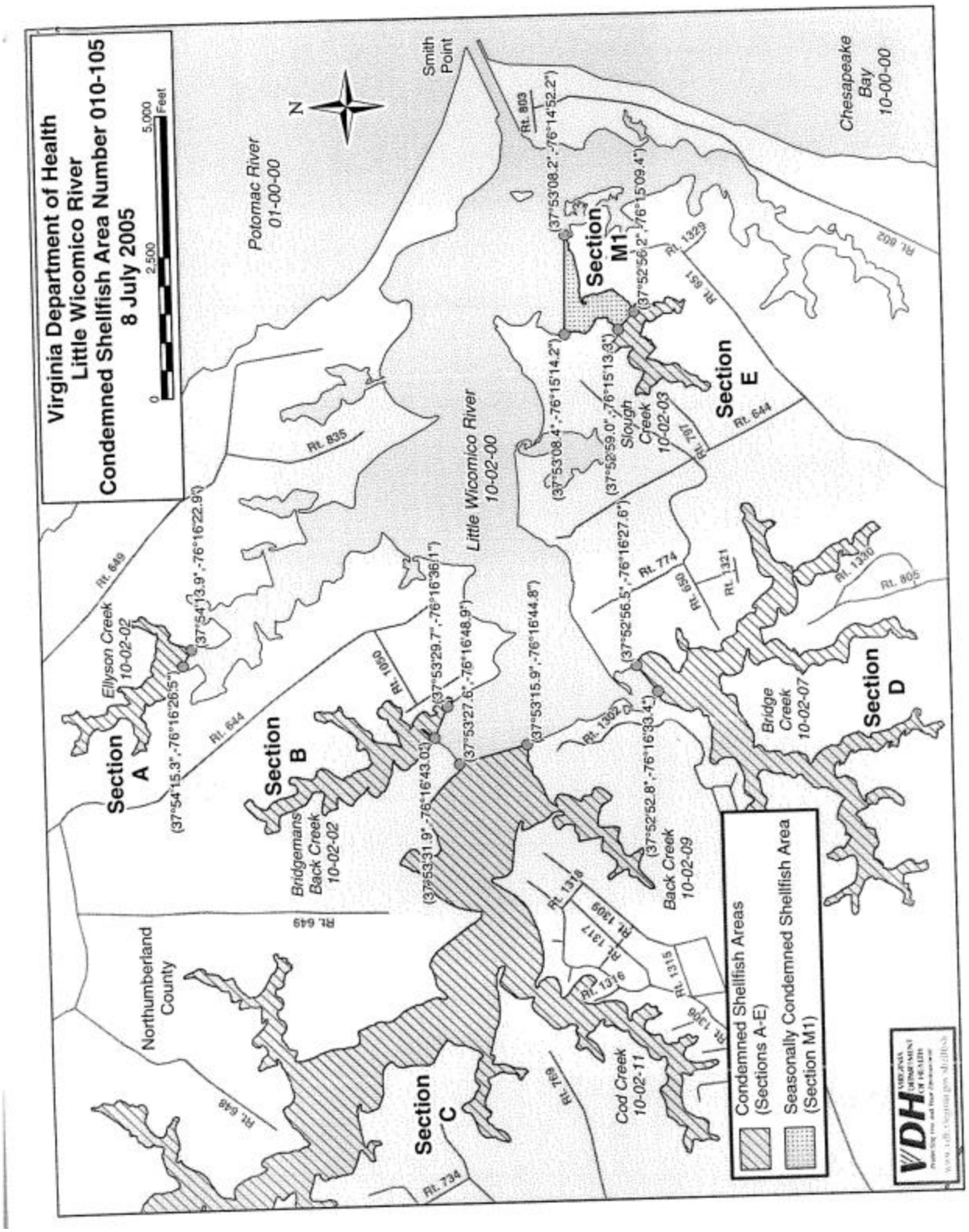
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond013-220.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.19 Cockrell Creek – Condemned Shellfish Area Map



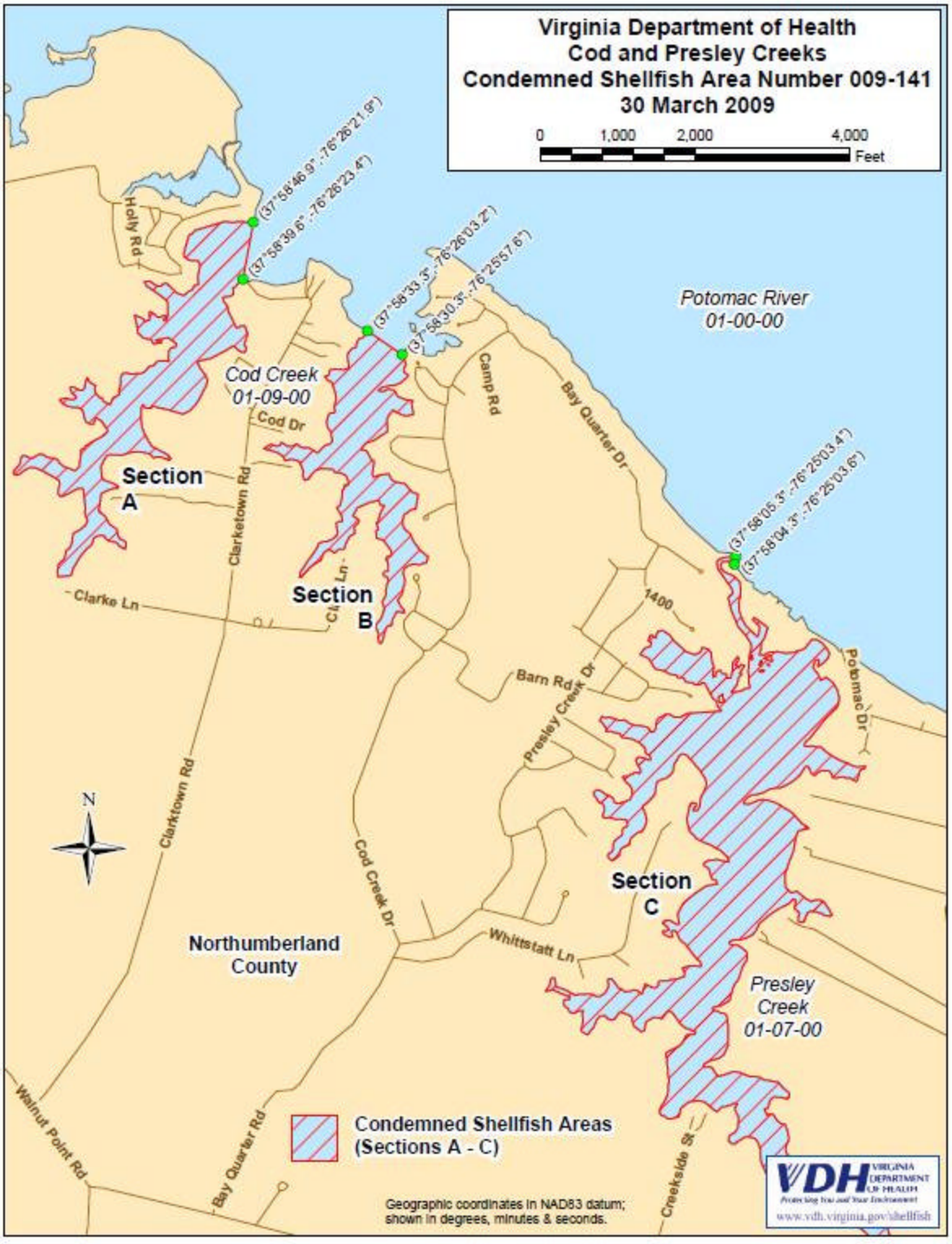
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond012-002.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.20 Little Wicomico River – Condemned Shellfish Area Map



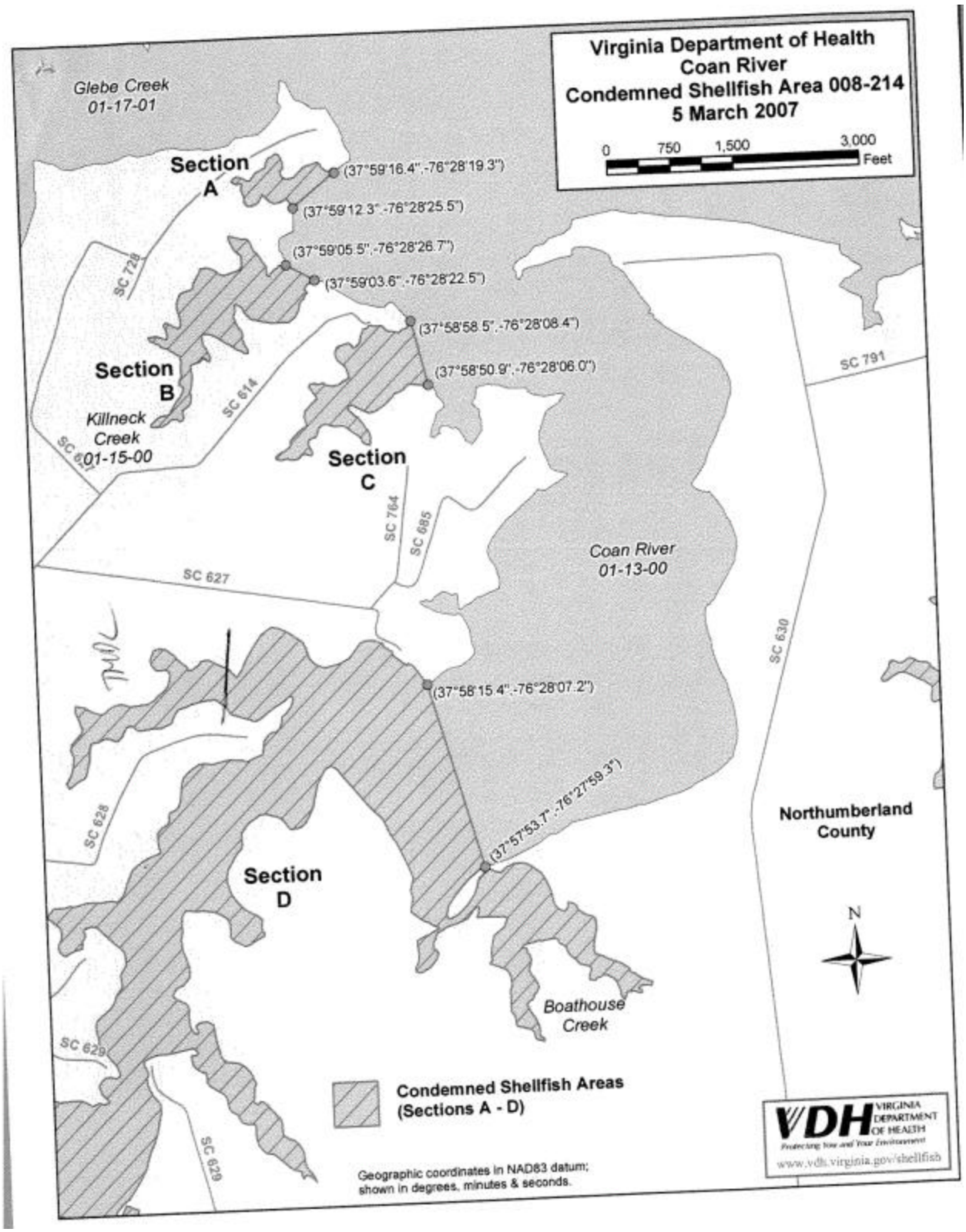
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond010-105.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.21 Cod Creek – Condemned Shellfish Area Map



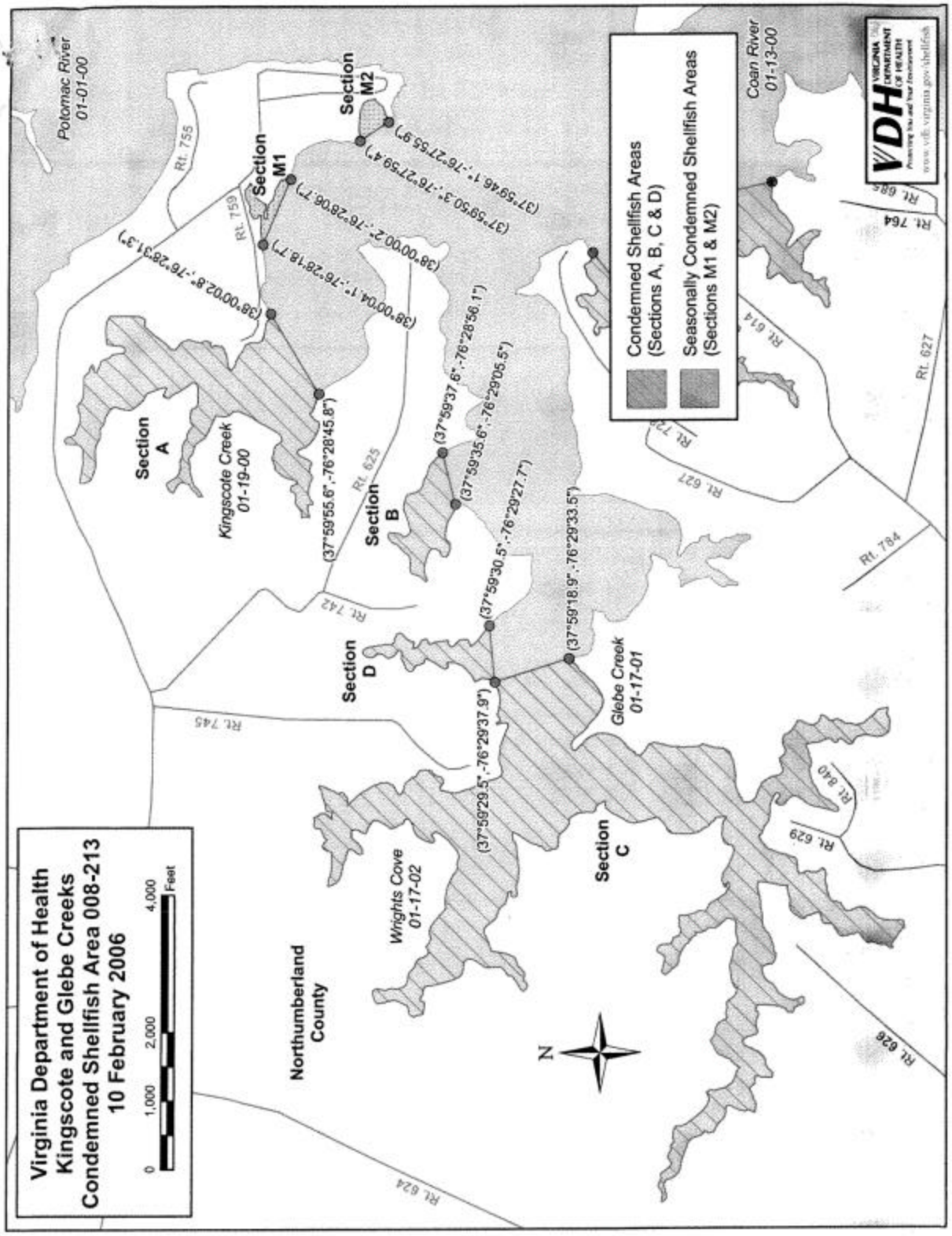
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond009-141.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.22 Coan River – Condemned Shellfish Area Map



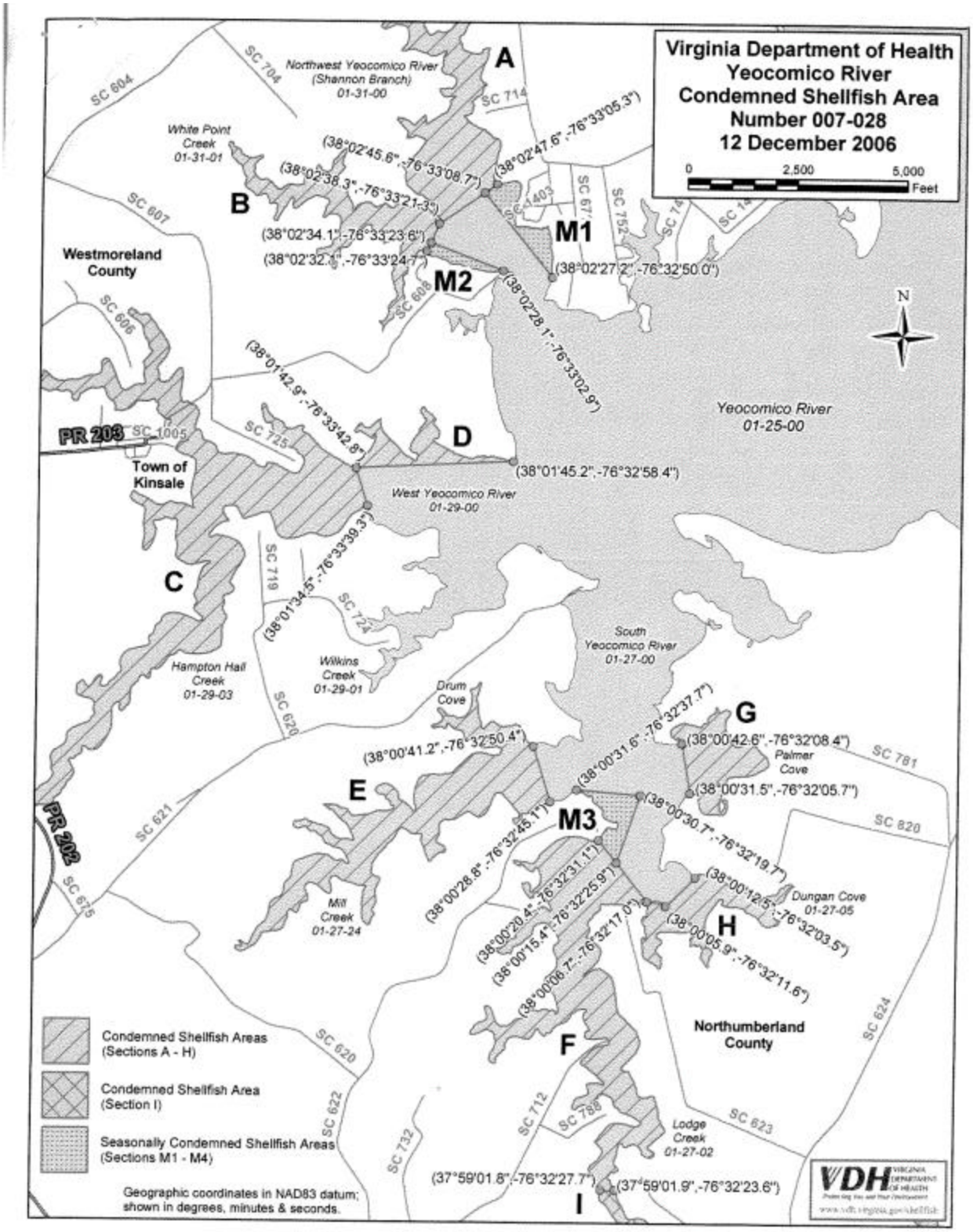
Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond008-214.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.23 The Glebe and Judith Sound – Condemned Shellfish Area Map



Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond008-213.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

6.24 Yeocomico River – Condemned Shellfish Area Map



Source: http://www.vdh.virginia.gov/EnvironmentalHealth/shellfish/closure/cond007-028.pdf
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey

7. FACILITY REQUIREMENTS WORKSHEET

NORTHUMBERLAND COUNTY

VESSEL LENGTH	Field Data	DGIF Data	VDH Data	Documented	ESTIMATE [1]
Less than 16 feet	1	2,788	-	-	**2,788**
16 to 26 feet [3]	126	4,871	489	28	**4,899**
27 to 40 feet [3]	87	641	633	393	**1,035**
Over 40 feet	10	33	-	119	**152**
TOTAL	**224**	**8,334**	**1,122**	**541**	**8,875**
Data set used in calculation [4]:	No	Yes	No	Yes	

Estimate of Required Pumpout Facilities	
A) Number of vessels 27-40 ft. in length	1,035
B) Enter % of 27-40 ft. vessels with holding tanks in Virginia [2]	25%
C) Estimated number of 27-40 ft. vessels with holding tanks (multiply lines A and B)	259
D) Enter the number of vessels greater than 40 ft. in length	152
E) Estimated total number of vessels with holding tanks (addition of lines C and D)	410.5
F) Estimated peak occupancy rate (i.e. on a holiday weekend; if unknown, use 40%)	40%
G) Estimated number of vessels requiring pumpout facilities (multiply lines E and F)	164.2
H) Average number of vessels served per hour per pumpout (if unknown, use 4/hr)	4
I) Average number of weekend operating hours per facility (if unknown, use 24 hrs.)	14.6
J) Estimated number of vessels served per pumpout facility (multiply lines H and I)	58.4
K) Estimated number of pumpout facilities required (divide line G by line J)	2.81

Estimate of Required Dump Stations	
L) Number of vessels 16-26 ft. in length	4,899
M) Enter % of 16-26 ft. vessels with portable toilets in Virginia [2]	37%
N) Estimated number of vessels with portable toilets (multiply lines L and M)	1,813
O) Estimated peak occupancy rate (if unknown, use 40%)	40%
P) Estimated number of vessels requiring dump stations (multiply lines N and O)	725.1
Q) Average number of vessels served per hour per station (if unknown, use 12/hr)	12
R) Average number of weekend operating hours per station (if unknown, use 24 hrs.)	14.6
S) Estimated number of vessels served per dump station (multiply lines Q and R)	175.2
T) Estimated number of dump stations required (divide line P by line S)	4.14

Source: Environmental Protection Agency, Document Number EPA 842-B-94-004, August 1994 - http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1007NAG.txt

1. Northumberland County DGIF data includes additional boats from Westmoreland County, in proportion to half of the Yeocomico River, which is part of Northumberland County's NDZ application; minus boats for the half of Indian Creek, which were allocated to the Lancaster County NDZ application. The boats added represent 10.4% of Westmoreland's DGIF totals. The 10.4% came from the number of E911 structures that are part of the Yeocomico River watershed that falls on the Westmoreland County side. In addition, 10.4% of Westmoreland County's federally-documented vessels were added to Northumberland County's total federally-documented vessels. The boats substracted represent 0.3% of DGIF totals and Federally Documented totals for Lancaster County, based on the E911 structures that are part of Indian Creek, which is part of the Lancaster County NDZ application.
2. Source: "Clean Vessel Act: Pumpout Station and Dump Station Technical Guidelines," Federal Register, Vol. 59, No. 47, March 10, 1994; and "National Recreational Boating Survey: Sanitation Pumpout Questionnaire Tabulations," U.S. Department of Fish and Wildlife Service, January 1992.
3. Original worksheet's 26-to-40-foot category adjusted to 27-to-40, to avoid overlaps.
4. In the interest of avoiding double-counting, and of obtaining a conservative estimate of the number of facilities needed to provide pumpout and dump-station services for every potential vessel in the proposed No Discharge Zone, this application only uses the combined totals from the Virginia Department of Game and Inland Fisheries (i.e., DGIF) and from the U.S. Coast Guard (i.e., Documented). See Section 3.3 (Page 17) for details.

8. REFERENCES

8.1 Species

Most prevalent species in and around the subject waters of this application:

BOVA Code	Status*	Tier**	Common Name	Scientific Name
70148		I	Amphipod, Lancaster County	Crangonyx baculispina
50021	FESE	II	Bat, gray	Myotis grisescens
100361	FTST	II	Beetle, northeastern beach tiger	Cicindela dorsalis dorsalis
40038		II	Bittern, American	Botaurus lentiginosus
40372		I	Crossbill, red	Loxia curvirostra
40052		II	Duck, American black	Anas rubripes
40093	FSST	II	Eagle, bald	Haliaeetus leucocephalus
40403	ST		Falcon, Arctic peregrine	Falco peregrinus tundrius
40096	ST	I	Falcon, peregrine	Falco peregrinus
40029		II	Heron, little blue	Egretta caerulea caerulea
40144	FC	IV	Knot, red	Calidris canutus rufus
40213		II	Owl, northern saw-whet	Aegolius acadicus
40114		II	Oystercatcher, American	Haematopus palliatus
40120	FTST	I	Plover, piping	Charadrius melodus
40118	SE	I	Plover, Wilson's	Charadrius wilsonia
40110		I	Rail, black	Laterallus jamaicensis
40105		II	Rail, king	Rallus elegans
40129	ST	I	Sandpiper, upland	Bartramia longicauda
40225		I	Sapsucker, yellow-bellied	Sphyrapicus varius
40293	ST	I	Shrike, loggerhead	Lanius ludovicianus
40292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
40192		II	Skimmer, black	Rynchops niger
40379	ST	I	Sparrow, Henslow's	Ammodramus henslowii
40381		II	Sparrow, saltmarsh sharp-tailed	Ammodramus caudacutus
50062	FESE	II	Squirrel, Delmarva Peninsula fox	Sciurus niger cinereus
10032		II	Sturgeon, Atlantic	Acipenser oxyrinchus
40179	ST	I	Tern, gull-billed	Sterna nilotica
40187		II	Tern, royal	Sterna maxima maximus
30067	CC	II	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin
30072	FTST		Turtle, green sea	Chelonia mydas
30073	FESE		Turtle, hawksbill (= carey) sea	Eretmochelys imbricata
30074	FESE		Turtle, Kemp's (= Atlantic) Ridley sea	Lepidochelys kempii
30075	FESE		Turtle, leatherback sea	Dermochelys coriacea
30071	FTST	I	Turtle, loggerhead sea	Caretta caretta
30063	CC	III	Turtle, spotted	Clemmys guttata
40319		I	Warbler, black-throated green	Dendroica virens
40320		II	Warbler, cerulean	Dendroica cerulea
40304		II	Warbler, Swainson's	Limnothlypis swainsonii
40266		II	Wren, winter	Troglodytes troglodytes

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Source: Virginia Department of Game and Inland Fisheries

A complete species list is available by search at the DGIF website: http://vafwis.org/fwis/?Menu=Home.__By+Place%20Name

8.2 Public Support

WATER BODY	NDZ Interest (Written letter of support / request unless otherwise noted)		
	Government	Marina Owner	Citizen
TBA	DEQ, VDH, DCR	TBA	TBA
	DEQ, VDH, DCR	TBA	TBA

8.3 Marine Sanitation Device (MSD) Standard

40 CFR §140.4(a)
TITLE 40 - PROTECTION OF ENVIRONMENT
CHAPTER I - ENVIRONMENTAL PROTECTION AGENCY
SUBCHAPTER D - WATER PROGRAMS

PART 140 - MARINE SANITATION DEVICE STANDARD

140.4 - Complete prohibition.

(a) Prohibition pursuant to CWA section 312(f)(3): a State may completely prohibit the discharge from all vessels of any sewage, whether treated or not, into some or all of the waters within such State by making a written application to the Administrator, Environmental Protection Agency, and by receiving the Administrator's affirmative determination pursuant to section 312(f)(3) of the Act. Upon receipt of an application under section 312(f)(3) of the Act, the Administrator will determine within 90 days whether adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels using such waters are reasonably available. Applications made by States pursuant to section 312(f)(3) of the Act shall include: (1) A certification that the protection and enhancement of the waters described in the petition require greater environmental protection than the applicable Federal standard; (2) A map showing the location of commercial and recreational pump-out facilities; (3) A description of the location of pump-out facilities within waters designated for no discharge; (4) The general schedule of operating hours of the pump-out facilities; (5) The draught requirements on vessels that may be excluded because of insufficient water depth adjacent to the facility; (6) Information indicating that treatment of wastes from such pump-out facilities is in conformance with Federal law; and (7) Information on vessel population and vessel usage of the subject waters.

(b) Prohibition pursuant to CWA section 312(f)(4)(A): a State may make a written application to the Administrator, Environmental Protection Agency, under section 312(f)(4)(A) of the Act, for the issuance of a regulation completely prohibiting discharge from a vessel of any sewage, whether treated or not, into particular waters of the United States or specified portions thereof, which waters are located within the boundaries of such State. Such application shall specify with particularly the waters, or portions thereof, for which a complete prohibition is desired. The application shall include identification of water recreational areas, drinking water intakes, aquatic sanctuaries, identifiable fish-spawning and nursery areas, and areas of intensive boating activities. If, on the basis of the State's application and any other information available to him, the Administrator is unable to make a finding that the waters listed in the application require a complete prohibition of any discharge in the waters or portions thereof covered by the application, he shall state the reasons why he cannot make such a finding, and shall deny the application. If the Administrator makes a finding that the waters listed in the application require a complete prohibition of any discharge in all or any part of the waters or portions thereof covered by the State's application, he shall publish notice of such findings together with a notice of proposed rule making, and then shall proceed in accordance with 5 U.S.C. 553. If the Administrator's finding is that applicable water quality standards require a complete prohibition covering a more restricted or more expanded area than that applied for by the State, he shall state the reasons why his finding differs in scope from that requested in the State's application.

(1) For the following waters the discharge from a vessel of any sewage (whether treated or not) is completely prohibited pursuant to CWA section 312(f)(4)(A): (i) Boundary Waters Canoe Area, formerly designated as the

Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, as described in 16 U.S.C. 577577d1.

(ii) Waters of the State of Florida within the boundaries of the Florida Keys National Marine Sanctuary as delineated on a map of the Sanctuary at http://www.fknms.nos.noaa.gov/.

(c)(1) Prohibition pursuant to CWA section 312(f)(4)(B): A State may make written application to the Administrator of the Environmental Protection Agency under section 312(f)(4)(B) of the Act for the issuance of a regulation establishing a drinking water intake no discharge zone which completely prohibits discharge from a vessel of any sewage, whether treated or untreated, into that zone in particular waters, or portions thereof, within such State. Such application shall: (i) Identify and describe exactly and in detail the location of the drinking water supply intake(s) and the community served by the intake(s), including average and maximum expected amounts of inflow; (ii) Specify and describe exactly and in detail, the waters, or portions thereof, for which a complete prohibition is desired, and where appropriate, average, maximum and low flows in million gallons per day (MGD) or the metric equivalent; (iii) Include a map, either a USGS topographic quadrant map or a NOAA nautical chart, as applicable, clearly marking by latitude and longitude the waters or portions thereof to be designated a drinking water intake zone; and (iv) Include a statement of basis justifying the size of the requested drinking water intake zone, for example, identifying areas of intensive boating activities.

(2) If the Administrator finds that a complete prohibition is appropriate under this paragraph, he or she shall publish notice of such finding together with a notice of proposed rulemaking, and then shall proceed in accordance with 5 U.S.C. 553. If the Administrator's finding is that a complete prohibition covering a more restricted or more expanded area than that applied for by the State is appropriate, he or she shall also include a statement of the reasons why the finding differs in scope from that requested in the State's application.

(3) If the Administrator finds that a complete prohibition is inappropriate under this paragraph, he or she shall deny the application and state the reasons for such denial.

(4) For the following waters the discharge from a vessel of any sewage, whether treated or not, is completely prohibited pursuant to CWA section 312(f)(4)(B): (i) Two portions of the Hudson River in New York State, the first is bounded by an east-west line through the most northern confluence of the Mohawk River which will be designated by the Troy-Waterford Bridge (126th Street Bridge) on the south and Lock 2 on the north, and the second of which is bounded on the north by the southern end of Houghtaling Island and on the south by a line between the Village of Roseton on the western shore and Low Point on the eastern shore in the vicinity of Chelsea, as described in Items 2 and 3 of 6 NYCRR Part 858.4.

(ii) [Reserved] [41 FR 4453, Jan. 29, 1976, as amended at 42 FR 43837, Aug. 31, 1977; 60 FR 63945, Dec. 13, 1995; 63 FR 1320, Jan. 8, 1998; 67 FR 35743, May 21, 2002]

Source: http://cfr.vlex.com/vid/140-4-complete-prohibition-19813573

8.4 Virginia House Bill 1774

2009 Session - Enrolled
VIRGINIA ACTS OF ASSEMBLY –– CHAPTER

An Act to amend and reenact § 62.1-44.33 of the Code of Virginia, relating to establishing the tidal creeks of the Commonwealth as a "no discharge zone." [H 1774] Approved
Be it enacted by the General Assembly of Virginia:

1. That § 62.1-44.33 of the Code of Virginia is amended and reenacted as follows:
§ 62.1-44.33. Board to adopt regulations; tidal waters no discharge zones.

A. The State Water Control Board is empowered and directed to adopt all necessary regulations for the purpose of controlling the discharge of sewage and other wastes from both documented and undocumented boats and vessels on all navigable and nonnavigable waters within this Commonwealth.

No such regulation shall impose restrictions that are more restrictive than the regulations applicable under federal law; provided, however, the Board may adopt such regulations as are reasonably necessary with respect to: (i) vessels regularly berthed in marinas or other places where vessels are moored, in order to limit or avoid the closing of shellfish grounds; and (ii) no discharge zones. Documented and undocumented boats and vessels are prohibited from discharging into the Chesapeake Bay and the tidal portions of its tributaries sewage that has not been treated by a Coast Guard-approved Marine Sanitation Device (MSD Type 1 or Type 2); however, the discharge of treated or untreated sewage by such boats and vessels is prohibited in areas that have been designated as no discharge zones by the United States Environmental Protection Agency.

B. The tidal creeks of the Commonwealth are hereby established as no discharge zones for the discharge of sewage and other wastes from documented and undocumented boats and vessels. The Board shall adopt regulations for designated no discharge zones requiring (i) boats and vessels without installed toilets to dispose of any collected sewage from portable toilets or other containment devices at marina facilities approved by the Department of Health for collection of sewage wastes, or otherwise dispose of sewage in a manner that complies with state law; (ii) all boats and vessels with installed toilets to have a marine sanitation device to allow sewage holding capacity unless the toilets are rendered inoperable; (iii) all houseboats having installed toilets to have a holding tank with the capability of collecting and holding sewage and disposing of collected sewage at a pump-out facility; if the houseboats lack such tank with such capability, the toilet must be removed; (iv) y-valves, macerator pump valves, or any other through-hull fitting valves capable of allowing a discharge of sewage from marine sanitation devices to be secured in the closed position by a device that is not readily removable, including, but not limited to, a numbered container seal such that through-hull sewage is rendered inoperable; and (v) every owner or operator of a marina within a designated no discharge zone to notify boat patrons leasing slips of the sewage discharge restriction in the no discharge zone. As a minimum, notification shall consist of no discharge zone information in the slip rental contract and a sign indicating the area is a designated no discharge zone.

In formulating regulations pursuant to this section, the Board shall consult with the State Department of Health, the Department of Game and Inland Fisheries and the Marine Resources Commission for the purpose of coordinating such regulations with the activities of such agencies.

For purposes of this section "no discharge zone" means an area where the Commonwealth has received an affirmative determination from the U.S. Environmental Protection Agency that there are adequate facilities for the removal of sewage from vessels (holding tank pump-out facilities) in accordance with 33 U.S.C. § 1322(f)(3), and where federal approval has been received allowing a complete prohibition of all treated or untreated discharges of sewage from all vessels.

C. Violation of such regulations and violations of the prohibitions created by this section on the discharge of treated and untreated sewage from documented and undocumented boats and vessels shall, upon conviction, be a Class 1 misdemeanor. Every law-enforcement officer of this Commonwealth and its subdivisions shall have the authority to enforce the regulations adopted under the provisions of this section and to enforce the prohibitions on the discharge of treated and untreated sewage created by this section.

8.5 Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings

Virginia Administrative Code, CHAPTER 570, Part I, Introduction, Article 1

12VAC5-570-10. Definitions.

As used in this chapter, the words and terms hereinafter set forth shall have the following meanings respectively, unless the context clearly requires a different meaning.

"Board" means the State Board of Health.

"Boat" means any vessel or other watercraft, privately owned or owned by the Commonwealth or any political subdivision thereof, whether moved by oars, paddles, sails or other power mechanism, inboard or outboard, or any other vessel or structure floating on water in the Commonwealth of Virginia, whether or not capable of

self-locomotion, including but not limited to cruisers, cabin cruisers, runabouts, houseboats and barges. Excluded from this definition are commercial, passenger and cargo carrying vessels subject to the Quarantine Regulation of the United States Public Health Service adopted pursuant to Title 42 of the United States Code and ships or vessels of the U.S. Government and boats which are tenders to larger boats moored or stored at the same facility.

"Certificate" means a written approval from the Commissioner or his designated representative indicating that plans for sanitary facilities and sewage facilities meet or satisfy the minimum requirements of this chapter and § 32.1-246 of the Code of Virginia.

"Commissioner" means the State Health Commissioner whose duties are prescribed in § 32.1-19 of the Code of Virginia.

"Division" means the Division of Wastewater Engineering, Department of Health.

"Dry storage" means a boat storage or parking space, whether covered or uncovered, at a marina or other place where boats are moored for the purpose of storing boats on land between use.

"Marina" means any installation, operating under public or private ownership, which provides dockage or moorage for boats (exclusive of paddle or rowboats) and provides, through sale, rental or fee basis, any equipment, supply or service (fuel, electricity or water) for the convenience of the public or its leasee, renters or users of its facilities.

"Marine sanitation device" means any equipment, piping and appurtenances such as holding tanks for installation on board a boat which is designed to receive, retain, treat or discharge sewage and any process to treat such sewage.

"Other places where boats are moored" means any installation operating under public or private ownership, which provides dockage, moorage or mooring for boats (exclusive of paddle or rowboats) either on a free, rental or fee basis or for the convenience of the public.

"Owner" means the Commonwealth or any of its political subdivisions and any public or private institution, corporation, association, firm or company organized or existing under the laws of this or any other state or county, or any person or group of persons acting individually or as a group who owns a marina or other place where boats are moored.

"Pump-out facilities" means any device, equipment or method of removing sewage from a marine sanitation device. Also, it shall include any holding tanks either portable, movable or permanently installed, and any sewage treatment method or disposable equipment used to treat, or ultimately dispose of, sewage removed from boats.
"Sanitary facilities" means bathrooms, toilets, closets and other enclosures where commodes, stools, water closets, lavatories, showers, urinals, sinks or other such plumbing fixtures are installed.

"Seasonal slips" means any slip which is used, rented, leased or otherwise made available for mooring or docking of boats during the normal boating season, usually from April through September, or for any period greater than 30 days.

"Sewage" means the spent water or wastewater containing human excrement coming from toilets, bathrooms, commodes and holding tanks.

"Sewage treatment or disposal systems" means device, process or plant designed to treat sewage and remove solids and other objectionable constituents which will permit the discharge to another approved system, or an approved discharge to state waters or disposal through an approved subsurface drainfield or other acceptable method, such as incineration.

"Sewerage facilities" means entire sewage collection and disposal system including commodes, toilets, lavatories, showers, sinks and all other plumbing fixtures which are connected to a collection system consisting

of sewer pipe, conduit, holding tanks, pumps and all appurtenances, including the sewage treatment or disposal system.

"Transient slips" means temporary docking or mooring space which may be used for short periods of time, including overnight, days, or weeks, but less than 30 days.

Statutory Authority: §§ 32.1-12 and 32.1-246 of the Code of Virginia.

Historical Notes: Derived from VR355-17-01 § 1.1, eff. September 1, 1987; amended, Virginia Register Volume 6, Issue 24, eff. October 1, 1990.

Source: http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+12VAC5-570-10

Article 2 - General Information
12VAC5-570-20. Authority for regulations.

Section 32.1-12 and 32.1-246 of the Code of Virginia provides that the State Board of Health is empowered and directed to promulgate all necessary rules and regulations establishing minimum requirements as to adequacy of sewerage facilities at marinas and other places where boats are moored. These facilities should be sufficient to serve the number of boat slips or persons such marinas and places are designed to accommodate, regardless of whether such establishments serve food.

Statutory Authority: §§ 32.1-12 and 32.1-246 of the Code of Virginia.

Historical Notes: Derived from VR355-17-01 § 1.2, eff. September 1, 1987; amended, Virginia Register Volume 6, Issue 24, eff. October 1, 1990.

Source: http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+12VAC5-570-20

8.6 Additional References and Sources

Navigation Charts

http://www.charts.noaa.gov/OnLineViewer/12235.shtml
http://www.charts.noaa.gov/OnLineViewer/12233.shtml
http://www.charts.noaa.gov/OnLineViewer/AtlanticCoastViewerTable.shtml

Center for Coastal Resources Management

http://ccrm.vims.edu/gisdatabases.html

Environmental Protection Agency (EPA)

Protecting Coastal Waters from Vessel and Marina Discharges:
A Guide for State and Local Officials. Volume I
Establishing No Discharge Areas under section 312 of the Clean Water Act
August 1994 (includes the *Boater Sanitary Waste Reception Facility Requirements Worksheet*):
http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1007NAG.txt

Clean Water Act Section 312. November 27, 2002

Code of Federal Regulations Title 40: Protection of the Environment
Part 140: Marine Sanitation Device Standard

No Discharge Zones: How They Work
http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/vsdarticle.html

Virginia Department of Environmental Quality (DEQ)

Water Quality Monitoring
http://www.deq.virginia.gov/watermonitoring

Impaired Waters: 2008 Dissolved Oxygen Impairments
http://www.deq.virginia.gov/wqa/pdf/2008ir/maps/Impairments_2008_DO.pdf

Impaired Waters: Dissolved Oxygen Standards for the Chesapeake Bay and Tributaries
http://www.deq.virginia.gov/wqs/homepage.html (See pp. 44-45)

Impaired Water Search Form (All impaired waters by stream segment):
http://gisweb.deq.virginia.gov/FactSheets2008/Choose.aspx

What's in My Backyard?
http://www.deq.virginia.gov/mapper_ext/default.aspx?service=publicMaps/Whats_in_my_backyard

Virginia Water Quality Assessment 305(b)/303(d) Integrated Report, August 2006

Total Maximum Daily Loads (TMDLs): A TMDL Study identifies sources of pollution and reductions needed from the identified pollutants to attain water quality standards. Pollution from both point sources (such as residential, municipal, or industrial discharges) and non-point sources (such as residential, urban, or agricultural runoff) are included in a TMDL study.

TMDLs in Virginia:
http://www.deq.virginia.gov/tmdl/homepage.html
https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.jspx

For creeks that have not been approved yet:
https://www.deq.virginia.gov/TMDLDataSearch/DraftReports.jspx

To search for other creeks:
http://www.deq.state.va.us/tmdl/develop.html

Virginia Environmental Geographic Information Systems: It Provides various interactive mapping layers covering aquatic life, fish consumption, public water supply, recreation use, shellfish use, wildlife use, citizen monitoring, and "what's in my backyard."
http://www.deq.virginia.gov/mapper_ext/index.html

Virginia Department of Game and Inland Fisheries (VDGIF)

2007 Boater Registration Data

Species: http://vafwis.org/fwis/?Menu=Home.__By+Place%20Name

Virginia Department of Health (VDH)

Marina Inspection Forms for 2007
Office of Environmental Health Services

Boat Holding Tank Pump-out Facilities in Virginia – 2007, pp. 9-11
Division of Wastewater Engineering, Marina Program

Shellfish Closures – Regional Map
http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/closureSurvey/index.htm

Pumpout Data
http://www.vdh.virginia.gov/EnvironmentalHealth/Wastewater/MARINA/pumpoutdata/county

Virginia Department of Natural Resources

Chesapeake Bay and Virginia Waters Clean-up Plan. February 2007

U.S. Coast Guard

U.S. Coast Guard Station St. Inigoes
P.O. Box 8
St. Inigoes, Maryland 20684-0008
(301) 872-4345 Voice
(301) 872-4060 Fax
www.uscg.mil/d5/stastinigoes/

U.S. Coast Guard Station M ilford Haven
63 Mill Point Rd.
Hudgins, VA 23076
(804) 725-7330 Voice
(804) 725-7581 Fax
www.uscg.mil/d5/staMilfordHaven/

Nautical Mile = 1.1508 Land Mile

9. PUBLIC MEETING

9.1 Public Meeting & Comments

The public meeting for Northumberland County's No Discharge Zone application took place on May 31st, 2011, at 6 p.m., at the Northumberland County Courts Building, 39 Judicial Place, Heathsville, Virginia. The comment period that followed the meeting ended on June 30th, 2011. All comments received follow below.